instruction sheet

FOR THE

HEATHKIT

HEATHKIT MICROPHONE

MODEL HDP-21

INTRODUCTION

The HEATHKIT Model HDP-21 Microphone is of rugged construction and will withstand normal abuse with ease.

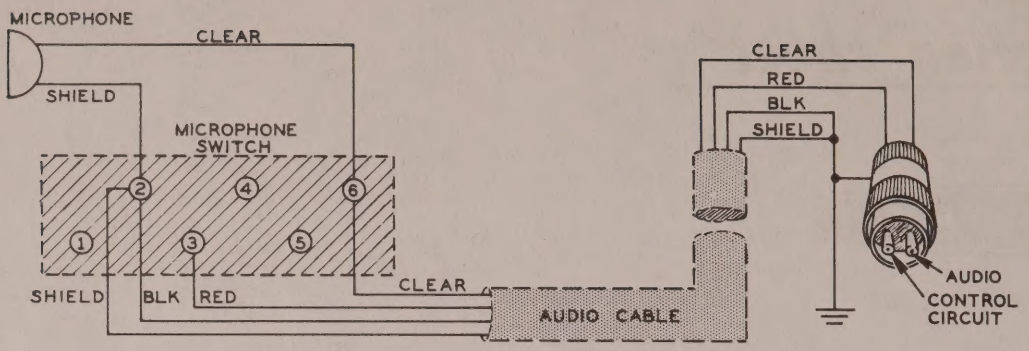
Its tailored frequency response provides more average sideband power and is especially recommended for voice communications.

FEATURES

Tailored Frequency Response..... Choice Of Switching Configurations..... Locking Button On Press-To-Talk Lever....Strong Die-Cast Zinc.

SPECIFICATIONS

Type	Dynamic, high impedance.
Frequency Response	300 to 3000 cps.
Output	56 db below 1 volt per microbar at 1800 cps.
Load Impedance	100 KΩ, minimum.
Maximum Switch Current	1 ampere.
Maximum Switch Voltage	125 volts AC or DC.
Material	Die-cast zinc and plastic.
Finish	Satin chrome and gray.
Dimensions	10" high x 5-1/8" base diameter.
Net Weight	1-3/4 lbs.
Shipping Weight	2 lbs.



STEP-BY-STEP INSTRUCTIONS

NOTE: The following wiring instructions are for standard VOX and push-to-talk operation, as would be used in the HEATHKIT Models HX-10, HX-20 and HX-30 Transmitters. If another type of wiring is required, refer to the Switch Explanation section and Figure 5.

Refer to Figure 1 for the following steps.

( ) Screw the BASE onto the end of the SWITCH RISER opposite the ADJUSTBLE COLLET.

( ) Screw the MICROPHONE onto the top of the SWITCH RISER. Be careful not to strip the threads.

( ) Remove the SWITCH COVER by removing the two Phillips head screws from the back of the SWITCH RISER.

( ) Remove the CABLE CLAMPS from the SWITCH RISER.

NOTE: The long length of cable supplied on the MICROPHONE can be connected directly to the transmitter if the switch is not to be used.

( ) Locate the cable with the microphone connector on one end; cut it to a length of 2" from the end of the spring of the connector and prepare the end as shown in Figure 2. Apply a small amount of solder to the exposed lead ends to hold the wire strands together.

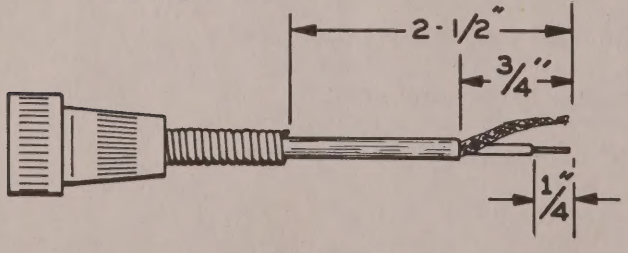


Figure 2

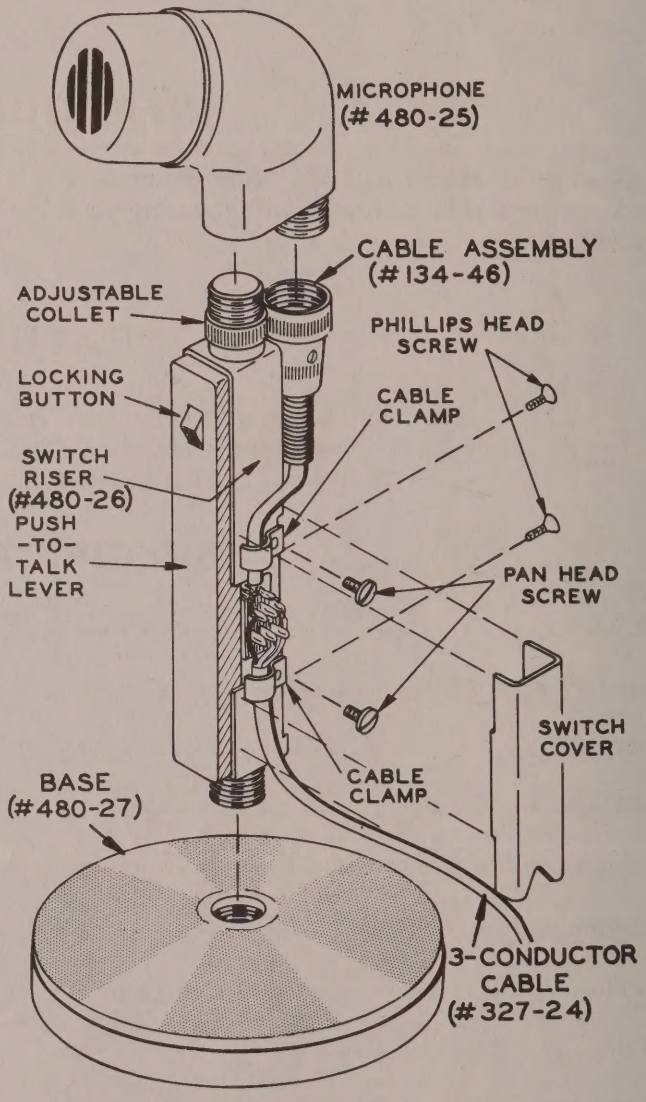


Figure 1

( ) Screw the microphone connector onto the Microphone.

( ) Locate the length of 3-conductor cable and prepare one end as shown in Figure 3. Apply a small amount of solder to the exposed lead ends.

Figure 3

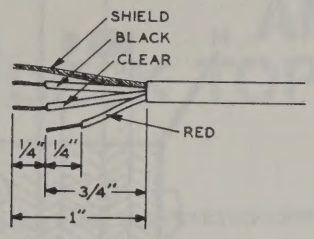


Figure 3

Refer to Figure 4 for the following steps.

Connect the cable coming from the microphone connector to the switch as follows:

( ) Connect the shield to lug 2. Do not solder.

( ) Connect the center conductor to lug 6. Do not solder.

Connect the 3-conductor cable to the switch as follows:

( ) Connect the shield to lug 2. Do not solder.

( ) Connect the black wire to lug 2. Solder all three connections.

( ) Connect the red wire to lug 3. Solder.

( ) Connect the clear wire to lug 6. Solder both connections.

( ) Position the cables as shown and mount the two CABLE CLAMPS.

( ) Mount the SWITCH COVER with the Phillips head screws.

( ) Prepare the free end of the 3-conductor cable to fit the connector to be used with your equipment. A two or more pin connector is required. Refer to the wiring diagram of your equipment for proper terminations at the connector.

( ) Connect the red wire to the control circuit pin of the cable connector. Solder.

( ) Connect the clear wire to the audio pin of the cable connector. Solder.

( ) Connect the black wire and the shield together, and fold them back along the outside (spring) of the connector.

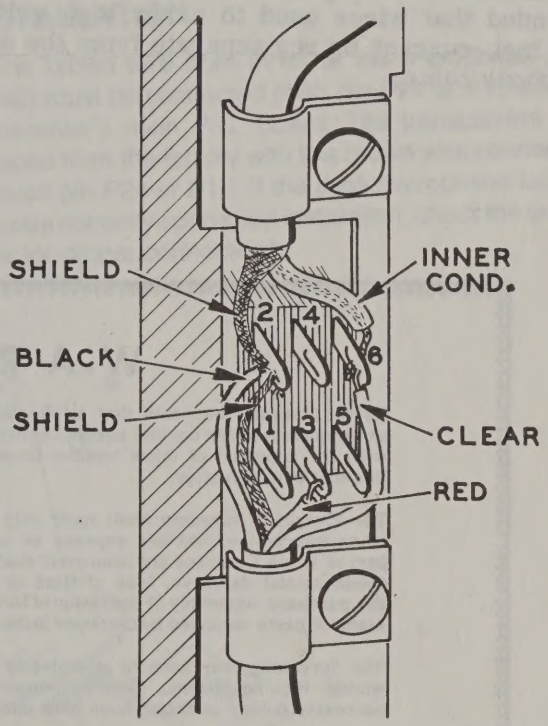


Figure 4

SWITCH EXPLANATION

Figure 5 shows the contact arrangement of the switch used in the Microphone. For switching requirements other than previously given, the following explanation should be helpful.

Contacts 1 and 2 break before 4 and 5 break. Contacts 4 and 5 break before 2 and 3 make. Contacts 2 and 3 make before 5 and 6 make. At G are the contact insulators, and at H is the push-to-talk lever return spring.

If the switch is to be used to operate a relay, be sure to check the Specifications for the maximum current rating of the contacts. It is recommended that wires used to carry high voltage or high current be run separate from the microphone cable.

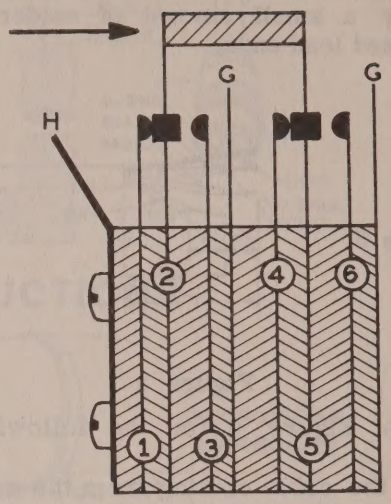


Figure 5

WARRANTY

Heath Company warrants that all Heathkit parts shall be free of all defects in materials and workmanship under normal use and service, and in fulfillment of such warranty Heath Company will, for a period of three months from the date of shipment, replace any part upon verification that it is defective.

The foregoing warranty shall apply only to the original buyer, and is and shall be in lieu of all other warranties, whether express or implied and of all other obligations or liabilities on the part of Heath Company and in no event shall Heath Company be liable for any anticipated profits, consequential damages, loss of time or other losses incurred by the buyer in connection with the purchase, assembly or operation of Heathkits or components thereof. No replacement shall be made of parts damaged by the buyer in the course of handling or assembling Heathkit equipment.

The foregoing warranty is completely void if corrosive solder or fluxes have been used in wiring the equipment. Heath Company will not replace or repair any equipment in which corrosive solder or fluxes have been used.

This warranty applies only to Heath equipment sold and shipped within the continental United States including APO and FPO shipments. Warranty replacement for Heathkit equipment outside the United States is on an f.o.b. factory basis. Contact the Heathkit authorized distributor in your country or write: Heath Company, International Division, Benton Harbor, Michigan, U.S.A.

HEATH COMPANY

1/15/65

uniden

AMX 150
DESK TOP MICROPHONE

GENERAL

The AMX 150 is a preamplified desk microphone designed for use with a base station.

THEORY OF OPERATION

The low level speech from the microphone element is fed to the base of the speech amplifier Q1 through capacitor C1. The output of Q1 (collector) is connected to the microphone input line via S1B.

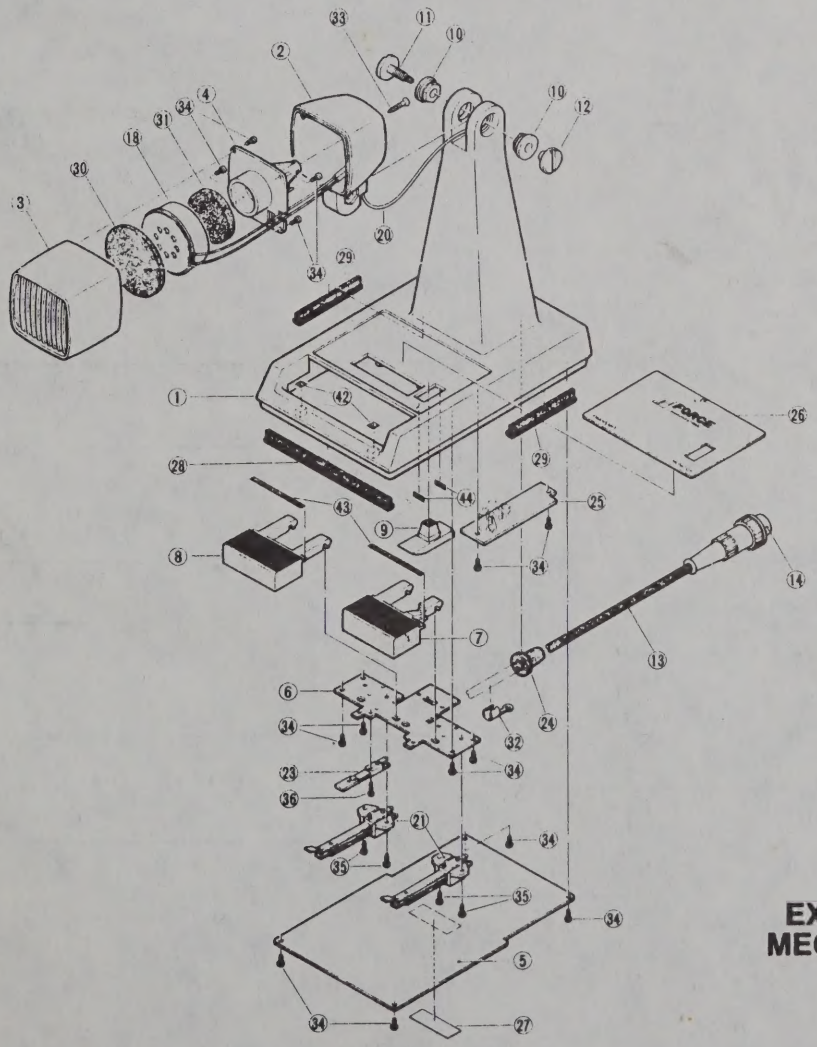
Switch, S1A grounds the PTT line of the transceiver placing it in the transmit mode.

Switch, S2 opens the ground on the monitor line allowing the user to monitor the channel.

The DC power needed to operate the preamplifier is supplied by the base station on pin 1 of the microphone jack.

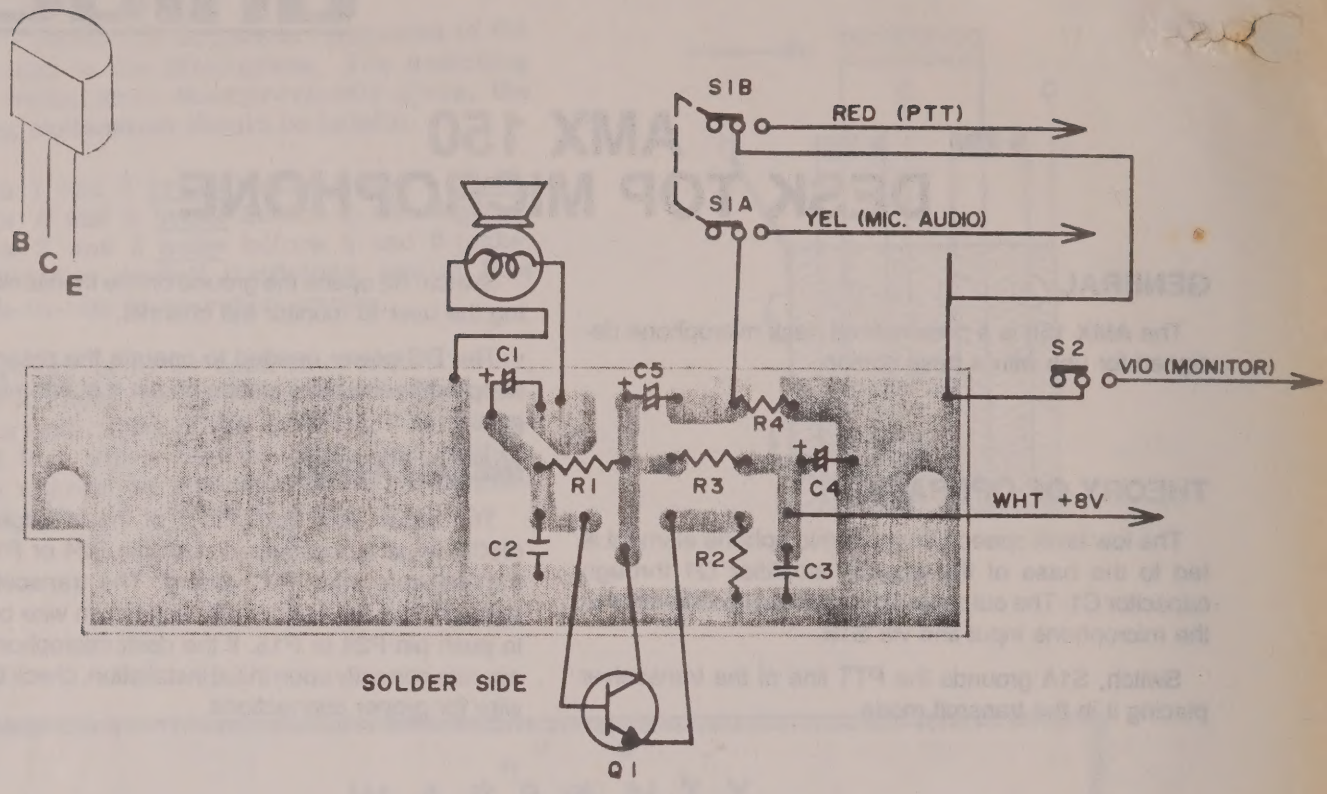
INSTALLATION

The brown wire from Pin 1 of the microphone jack (J502) must be connected push pin P24 or P15 on the transceiver's main P.C. Board. The transceivers are shipped from the factory with this brown wire connected to push pin P24 or P15. If the desk microphone fails to operate correctly upon initial installation, check the brown wire for proper connections.

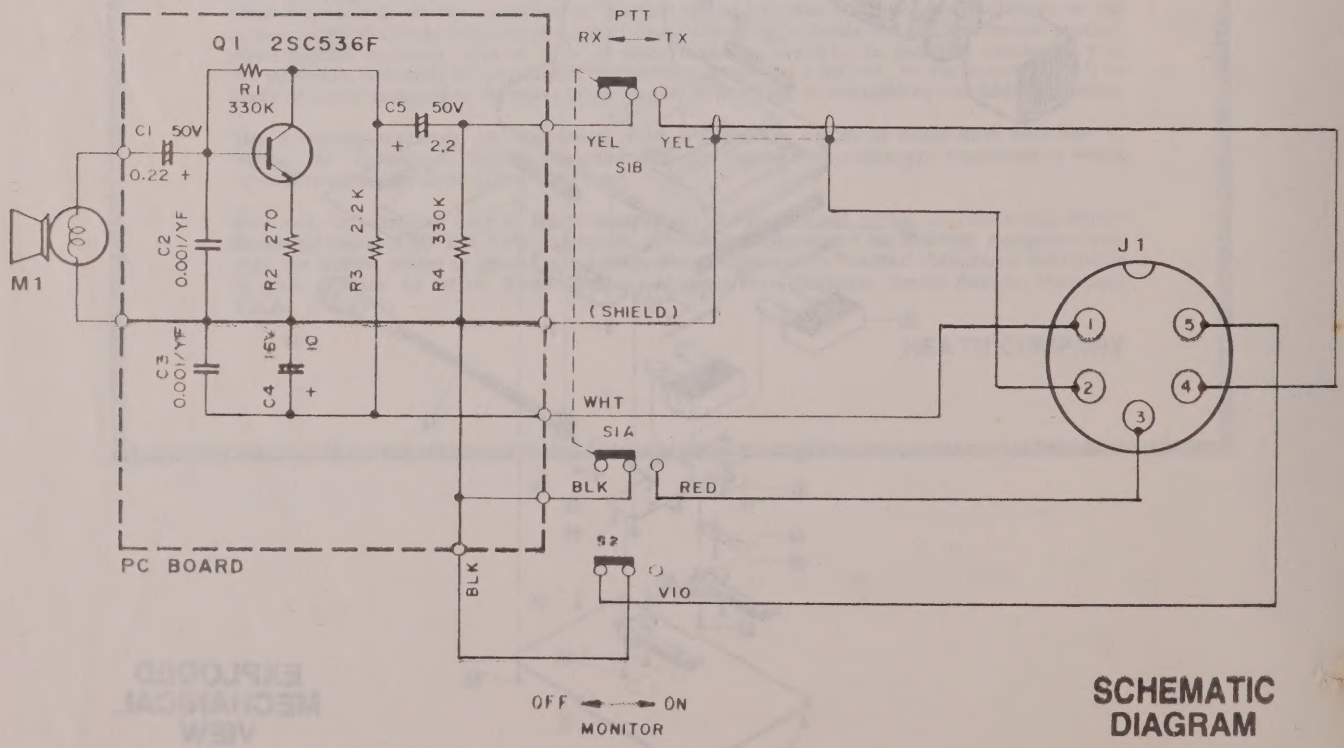


EXPLODED MECHANICAL VIEW

2SC536F



COMPONENT LOCATION DIAGRAM



SCHEMATIC DIAGRAM

PARTS LIST

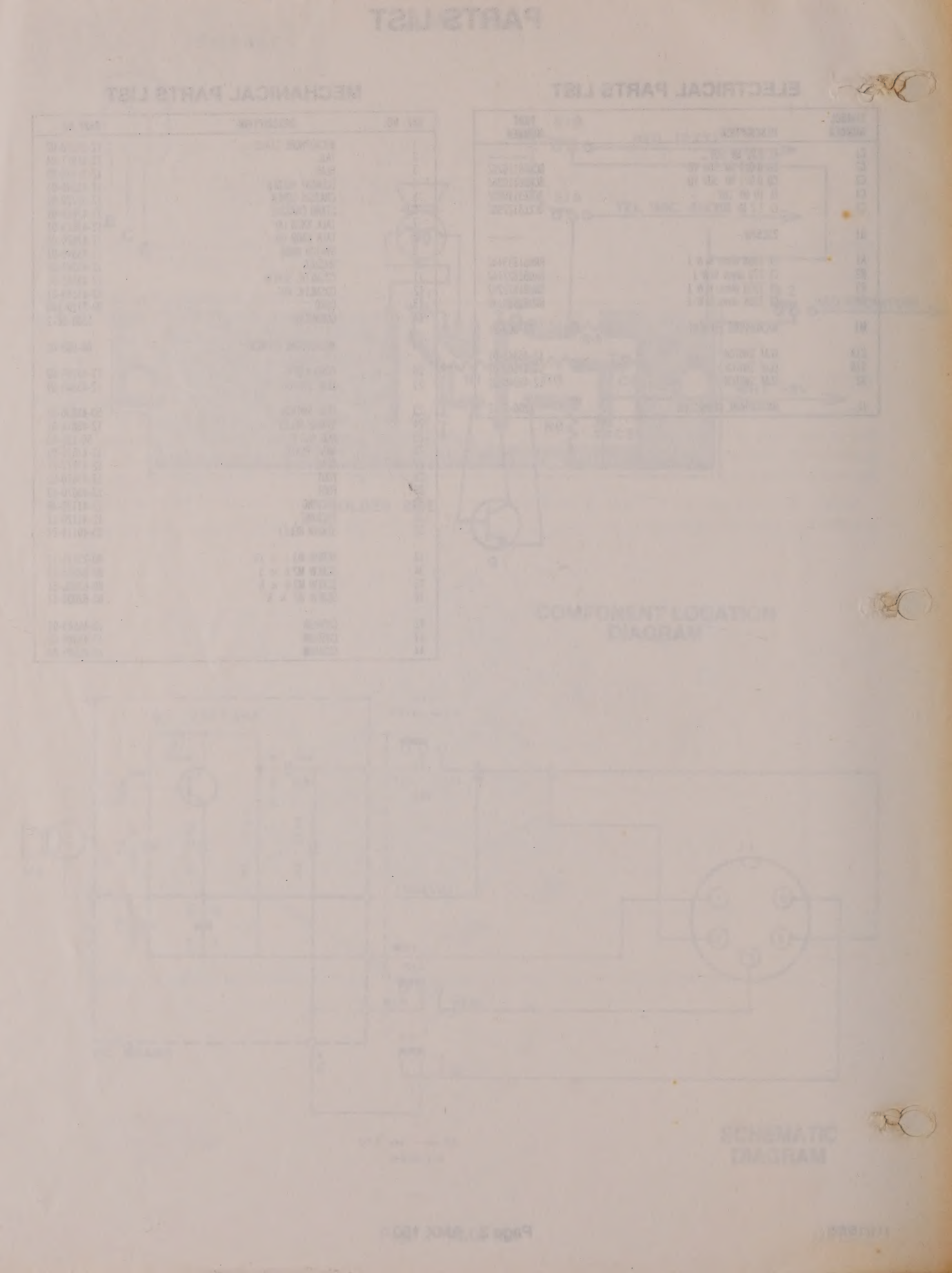
ELECTRICAL PARTS LIST

SYMBOL NUMBER	DESCRIPTION	PART NUMBER
C1	EL 0.22 MF 50V	———
C2	CD 0.001 MF 50V YD	BCKD811026Z
C3	CD 0.001 MF 50V YD	BCKD811026Z
C4	EL 10 MF 16V	BCEL311000Z
C5	EL 2.2 MF 50V	BCEL812290Z
Q1	2SC536F	———
R1	CF 330K ohms ¼W J	BRUB183344Z
R2	CF 270 ohms ¼W J	BRUB182714Z
R3	CF 2200 ohms ¼W J	BRUB182224Z
R4	CF 330K ohms ¼W J	BRUB183314Z
M1	MICROPHONE ELEMENT	08-063-01
S1A	LEAF SWITCH	12-45345-01
S1B	LEAF SWITCH	50-47100-01
S2	LEAF SWITCH	12-45345-01
J1	MICROPHONE CONNECTOR	1200-0012

MECHANICAL PARTS LIST

REF. NO.	DESCRIPTION	PART NO.
1	MICROPHONE STAND	12-20170-02
2	TAIL	12-31971-04
3	HEAD	12-31970-05
4	ELEMENT HOLDER	12 45346-01
5	CHASSIS COVER	12-32720-01
6	STAND CHASSIS	12-47618-01
7	TALK KNOB (A)	12-47619-01
8	TALK KNOB (B)	12-47620-01
9	SWITCH KNOB	12-45349-01
10	WASHER	12-45341-01
11	COSMETIC SCREW	12-45342-01
12	COSMETIC NUT	12-45343-01
13	CORD	90-2310-140
14	CONNECTOR	1200-0012
18	MICROPHONE ELEMENT	08-063-02
20	CORD ASS'Y	12-44703-02
21	LEAF SWITCH	12-45345-01
23	LEAF SWITCH	50-40836-01
24	STRAIN RELIEF	12-40814-01
25	PCB ASS'Y	50-196-01
26	NAME PLATE	12-47616-01
27	SEAL	12-47617-01
28	FOOT	12-45070-02
29	FOOT	12-45070-03
30	PACKING	12-41120-46
31	PACKING	12-41120-12
32	STRAIN RELIEF	35-40114-01
33	SCREW M3.1 × 16	80-23116-71
34	SCREW M2.6 × 5	80-62605-01
35	SCREW M2.6 × 6	80-62606-51
36	SCREW M2 × 8	80-62008-51
42	CUSHION	12-45589-01
43	CUSHION	12-45589-02
44	CUSHION	12-45589-04

Communicating for over 45 years
WIRING BOOKLET



Communicating for over 45 years

WIRING BOOKLET

TELEX

ATTENTION

Please read the following 12 pages before wiring your microphone

The information contained in this booklet is intended to be used as an aid in wiring Turner microphones to various transceivers. Telex Communications Inc. cannot assume responsibility for damage caused by wiring errors, nor can we accept responsibility for damage to equipment which is used in conjuction with our microphones.

If your transceiver is not listed in this instruction manual or you feel you cannot connect the microphone properly with the information provided in this booklet, you may receive assistance by mailing a copy of the circuit schematic for your radio to:

Turner Division of
Telex Communications, Inc.
ATTN: Customer Service
9600 Aldrich Ave. S.
Minneapolis, MN 55420
612-884-4051

*On the front cover is a 1933 vintage Turner condenser microphone.

ABBREVIATION EXPLANATION

The following abbreviations are used in this booklet, WR-77, listed in alphabetical order:

Bk ..... black wire
Bu ..... blue wire
Code (E) . electronic switching
Code (R) . relay switching
Code (S) . special switching, six-wire microphones (See page 4 for additional switching information)
Gnd..... ground
K ..... denotes X1000, Ex: 33K ohms = 33000 ohms
N/C ..... no connection
R ..... red wire
Rg ..... ring, one of three conductors of a phone jack-type plug.
S ..... shield wire, also known as the ground wire.
Se ..... sleeve, one of three conductors of a phone jack-type plug.
Sh ..... shell
Sw.K..... switch kit, applies only to desk microphones, see page 9, 'Receiver signal reduced or replaced by squealing.'
Tp ..... tip, one of three conductors of a phone jack-type plug.
W..... white wire
Y ..... yellow wire

The following information is a breakdown of the symbol designation used with Turner microphones:

C ..... ceramic interior — Ex: 450**C**
CS..... custom special — Ex: **CS**-1 (also referred to as special — Ex: M+3**special,** model numbers that have the last digit as "6", ie: RK56, RK66, or RK76 are also special microphones, see page 4 for further information.)
D ..... dynamic interior — Ex: 360**D**
H ..... high impedance — Ex: 566**H**
J..... electronic switching — Ex: **JM**+2/U (a relay-switched microphone would be M+2/U)
L ..... low impedance — Ex: 360**L** or J450C-**LO**
M..... medium impedance — Ex: NC350D**M**
NC..... noise canceling — Ex: **NC**450D
+..... amplified microphone — Ex: +350 or M+3
R ..... carbon interior — Ex: SR90**R**
RK..... Road King series — Ex: **RK**70J

EXPLANATION OF:

Code (E) — signifies that the radio is internally switched from receive to transmit by means of vacuum tubes or solid-state circuitry. Transceivers having electronic switching [Code (E)] require a Turner microphone that is internally wired for electronic switching. The following are some electronic-type microphones:
mobile — JM+2/U, JM+3, RK50J, RK60J, RK70J, J+350, J450, etc.
desk — +2, +3, or Super Sidekick, etc.

Code (R) — signifies that the radio is internally switched from receive to transmit by an electro-magnetic device commonly called a relay. Transceivers having relay switching [Code (R)] require a Turner microphone that is internally wired for relay switching. The following are some relay-type microphones:
mobile — M+2/U, M+3, RK50, RK60, RK70, +350, 450C, etc.
desk — +2, +3, or Super Sidekick, etc.

Code (S) — signifies that the radio is internally switched from receive to transmit by isolated switching, transferring B+ voltage from one circuit to the other. Therefore, this type transceiver **requires** one of the following:
mobile — M+3special, M+3B, RK56, RK66, RK76, Expander 400, etc.
desk — CS-1, +3B, CS-3, Expander 500, etc.

ATTENTION

Six (6) wire microphones used for Code (E) or Code (R) radio.

If you have purchased a six-wire microphone and your transceiver is either Code (E) or Code (R), refer to the following chart and examples for proper hook-up:

Code (E) Conversion

Code (E) wiring	6-wire microphone equivalent
White	white
Black	blue
Red	black
Shield	shield & red
	yellow wire not used

Example:

Midland 13-830 — Code (E)

From	To
1-white (W)	1-white (W)
2-shield (S)	2-shield & red (S&R)
3-red (R)	3-black (Bk)
4-black (Bk)	4-blue (Bu)
	yellow (Y) not used

Code (R) Conversion

Code (R) wiring	6-wire microphone equivalent
White	white
Black	blue
Red	red
Shield	shield
	black & yellow not used

Example:

Cobra 28 — Code (R)

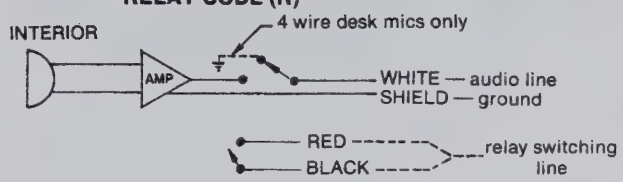
From	To
1-S	1-S
2-W	2-W
3-Bk	3-Bu
4-R	4-R
	Bk & Y not used

Note: When using six-wire microphones it would be best to connect the unused wires to the shield or ground wire.

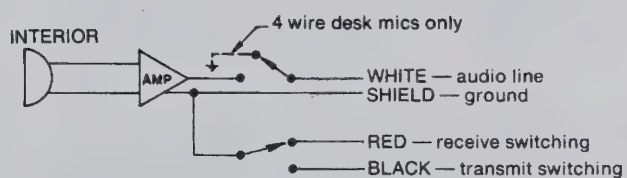
Simplified Schematics

(ALL SWITCHES SHOWN IN "RECEIVE" POSITION)

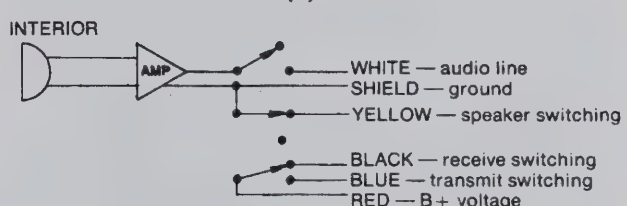
RELAY CODE (R)



ELECTRONIC CODE (E)



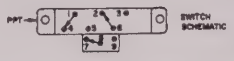
SPECIAL CODE (S)



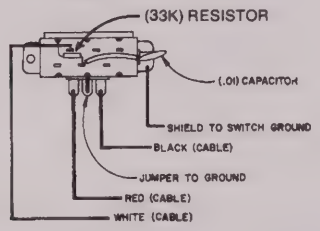
THE DIFFERENCE IN INTERNAL WIRING FOR RELAY AND ELECTRONIC SWITCHING M+2/U, JM+2/U MOBILE MICROPHONES

The sketches below reflect the difference in the internal wiring of the M+2/U (RELAY SWITCHING) and the JM+2/U (ELECTRONIC SWITCHING). To convert from one to the other follow these simple instructions:

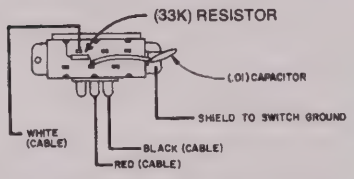
1. Remove the 4 screws in the rear housing holding the microphone together.
2. With the microphone lying face down, remove the rear housing to expose the switch.
3. Rewire the switch as necessary as shown on the sketches, and reassemble the microphone.



JM + 2U



M + 2U



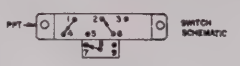
THE DIFFERENCE IN INTERNAL WIRING FOR RELAY AND ELECTRONIC SWITCHING NEW MODEL M+2/U, JM+2/U MOBILE MICROPHONES

The following sketches are diagrams of the difference in internal wiring of the new models, M+2/U (RELAY SWITCHING) and JM+2/U (ELECTRONIC SWITICHING). The new models have fewer components than the old style, as can be noted by the deleted capacitor and resistor from the switch block. Due to the advanced engineering of the new M+2/U, the output level has been increased to provide for plenty of "talk" power. This microphone began its production in Conrac's West German plant, but before long, it will be manufactured in the states.

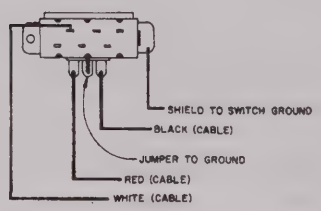
To convert from relay to electronic switching follow these simple instructions:

1. Remove the 4 screws in the rear housing holding the microphone together.

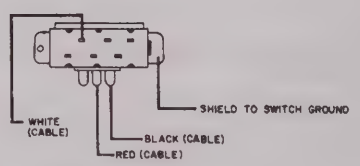
2. With the microphone lying face down, remove the rear housing to expose the switch.
3. Rewire the switch as necessary as shown on sketches, and reassemble the microphone.



JM + 2U



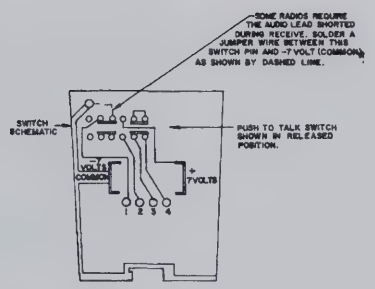
M + 2U

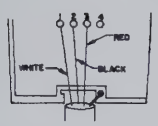


THE DIFFERENCE IN INTERNAL WIRING FOR RELAY AND ELECTRONIC SWITCHING M+3, JM+3, RK60, RK60J, RK70, RK70J MOBILE MICROPHONES

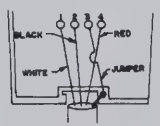
The sketches below reflect the differences in the internal wiring of the M+3, RK60, RK70 (RELAY SWITCHING) and the JM+3, RK60J, RK70J (ELECTRONIC SWITCHING). To convert from one to the other follow these simple instructions.

1. Unscrew the hanger button and remove the rear door.
2. Remove the two screws under the door holding the microphone together.
3. With the microphone lying face down, hold down on the cable and remove the rear housing by lifting it off the microphone from the bottom first. This will expose the four terminals to which the cable is wired.
4. Rewire the cable to the four terminals as necessary and reassemble the microphone.
5. When installing the rear housing, hook the top of the rear housing under the teeth on the top of the front housing and fold together.


SOME RADIOS REQUIRE THE AUDIO LEAD SHORTED DURING RECEIVE. SOLDER A JUMPER WIRE BETWEEN THIS SWITCH PIN AND -7 VOLT (COMMON) AS SHOWN BY DASHED LINE.
SWITCH SCHEMATIC
PUSH TO TALK SWITCH SHOWN IN RELEASED POSITION.
VOLTS COMMON
+ 7VOLTS
1 2 3 4



M+3, RK60, RK70



JM+3, RK60J, RK70J

IN CASE OF DIFFICULTY

Squeal During Transmit — normally caused by RF energy entering the transceiver from the microphone's white audio wire. Generally the best remedy for this problem is to insert a 47 to 50 micro henry (uh) rf choke in series with the white audio lead in the microphone. If RF chokes are not available, a resistor of values from 2.7K ohms to 10K ohms, ¼ watt, in series with the white audio lead should suffice. Although, when resistors are used the microphone output will be reduced.

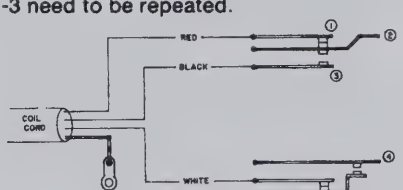
Squeal During First Portion Of Receive And Transmit In Desk Mics — normally caused by switch misadjustment in desk microphones. To remedy this, adjust the key line so that it will switch to transmit at the same time the audio circuitry in the desk microphone is turned on.

Step 1: Remove the four screws that hold the bottom plate onto the microphone. This will expose the switches in the microphone for adjustment.

Step 2: Bend contact #3 so that it will be closer to contact #2 (see switch diagram below).

Step 3: Replace bottom plate on microphone.

Step 4: Test the microphone with the radio by pushing down slowly on the push-to-talk bar. If the radio speaker squeals, steps 1-3 need to be repeated.



Excessive Battery Drain — may be caused by switch misadjustment in desk microphones. Adjustment may be attained by bending contact #4 up slightly to open battery circuit. Also a defective amplifier assembly or pinched wires in both mobile and desk microphones can cause battery drain.

Receiver Signal Reduced or Replaced By Squealing — most often caused by the shorted-to-ground white lead in +2, +3 and Super Sidekick desk microphones. Disconnect the white lead from the plug with the receiver in the receive mode. If the receive signal returns to normal, you should order one of the following switch kits:

Part #

B25475 Switch and installation instructions for +2 microphone

B75255 Switch and installation instructions for +3 microphone

B75255-1 Switch and installation instructions for Super Sidekick microphone

Send $4.00 for each kit required, enclosing check or money order for payment to:

Turner Division of Telex
Attn: Small Part Sales
8601 N.E. Highway 6
Lincoln, Nebraska 68505

Radio Immediately Transmits When Microphone Is Plugged In — normally occurs in electronic switching radios and may usually be corrected by reversing the red and black leads, black and blue in 6-wire microphones.

TROUBLESHOOTING

If you feel that a microphone may be defective, it is advisable to check the following points before taking further action:

1. Battery — check for proper voltage.
2. Battery connector — make sure battery is making solid contact with the connector.
3. Plug wiring — check wiring instructions and resolder all connections making certain that none of the exposed portions of the wires can come in contact with any of the other wires or the case of the connector.
4. If possible, wire your microphone to a different radio or wire another microphone to your radio to check for a defective microphone.
5. If available, check the output of the microphone by using an oscilloscope (preferable) or a high impedance voltmeter. Check for the presence of an AC signal between the white wire and shield while whistling into the keyed microphone with the volume control at maximum. You should read approximately 1 volt RMS.
6. Microphones that sound hollow or too bassy can

often be fixed by placing a .01 micro farad (uf) disc capacitor between the white audio wire and the shield, or in series with the white wire inside of the microphone.

7. Complaints of Fuzzy Speech may be attributed to overmodulation, a defective modulator stage or defective microphone. Fuzzy speech caused by overmodulation may be eliminated by reducing power microphone gain setting.
8. At times it may appear that this wiring booklet is in error on a given wiring diagram. Although the possibility of error exists, many times we have found that the transceiver manufacturer has changed his wiring to something other than shown on the schematic. If this is the case, the proper wiring can be figured out by solving the switching of the stock microphone and applying the resultant information to the Turner microphone. See page 5 for simplified switching schmetic of Turner mics.
9. If after trying the above you feel that the microphone is definitely defective, please return the mic to our Repair Department, enclosing the back cover of this booklet with the appropriate information.

THE USE OF VOX WITH THE TURNER SUPER SIDEKICK, SIDEKICK 100, +2, and +3 — Voice operated relay (VOX) is a means in which the radio circuitry takes audio input from the microphone and keys the transmitter key line. In order for a VOX circuit to work, the key line must not have a ground connected to it during its operation unless the VOX circuitry puts the ground on the key line. Most microphones used with VOX operation have the interior tied directly into the audio circuit of the radio and the key bar on the microphone does not need to be depressed for audio to be fed into the radio. However, on our models of base microphones with transistor amplifiers, the key bar must be depressed in order to give power to the amplifier in the microphone. In order to connect the Turner base-type transistorized microphones you should do the following: Contact the Turner white lead to the audio input of the plug. Connect the black Turner wire to the key line on the plug. Connect the shield to the shell or ground on the plug. **Leave the red wire completely disconnected.**

VOX Operation — For VOX operation put the switch at the bottom of the Turner microphone in relay position, and lock the touch bar on. The VOX circuitry will now work as normal. After using VOX be sure to unkey the microphone as battery drain will result if left on.

For a Normal Push-to-Talk Operation — Put the switch at the bottom of the microphone in electronic position and microphone will act normally for push-to-talk.

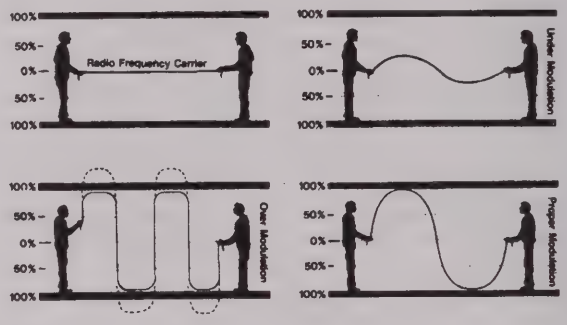
USE OF TURNER MICROPHONES

Turner Company manufactures two types of amplified microphones: the standard amplified microphone and a speech compressed microphone. In the use of a standard amplified microphone, the output will vary with distance between the mic and the sound source. However, the speech compressed mics maintain a relatively constant output with varying distances between the sound source and the mic. The CS-1, EX-400, EX-500, +3, +3B, M+3/special, M+3B, RK60/66 and RK70/76 are speech compressed models, while all other amplified microphones are of the standard type.

Amplified microphones cannot be used with any set requiring a carbon microphone without modification to the set. We do not recommend and do not assume any liability for such modification. Any attempt to use these microphones with a set of this type may result in damage to the microphone. We would recommend the Turner J+350 or +350 model microphone as they were designed primarily to work as transistorized replacement microphones in carbon microphone circuits.

SOME FACTS ABOUT AMPLIFIED MICROPHONES

If the microphone you have purchased is amplified, and you use it properly, you will noticeably improve your CB radio's clarity and EFFECTIVE range. The microphone will amplify the audio input to the radio, allowing you to use the microphone effectively from a comfortable distance as well as to create a higher AVERAGE modulation of the radio frequency (RF) carrier.



WHAT IS MODULATION?

Think of the radio frequency carrier as a rope held between two people. When you MODULATE a radio frequency carrier with your voice, you're moving the carrier in much the same manner that you would if you raised your arm up and down and made waves in the rope.

Just as it is possible to wave our imaginary rope with less than full force, it is possible to have a strong frequency carrier and still not have an intelligent message. The microphone that comes with a radio may not modulate or "move" the carrier enough to allow the radio to operate efficiently.

It is important to fully modulate for effective communications, but over-modulation is ineffective. Imagine conducting our rope experiment in a room with the ceiling representing the 100% modulation limit required by the FCC. See what happens when you raise your arm up and down too vigorously. With an over-modulated radio frequency carrier, severe distortion and cross channel splatter occurs.

ADJUSTING AN AMPLIFIED MICROPHONE FOR PROPER MODULATION

Begin transmitting with the microphone control near the low position. Ask other CB operators three to four miles away to check your signal strength and audio quality.

If you are told that your signal strength (S-meter reading) is good, but that audio intelligibility is weak, increase the microphone control slightly and ask for another audio check. Repeat the above procedure until told your transmission is breaking up or garbled. Reduce the microphone control setting slightly and repeat the audio check one more time. If audio quality is reported good on the last setting, the microphone has been properly set for optimum modulation and signal clarity. Later model CB radios may contain modulation — limiting circuitry which will not allow over modulation. Therefore, the transmission may not break up or sound garbled at the maximum gain setting.

ACSA CORP.

CB 700S, CBRI 805
Code (E)
1-S
2-W
3-Bk
4-R

AIMOR

CB7000

Code (R)		1-S
W to B1	or	2-W
R&S to Gnd		3-R
Bk to C102, RL1		4-Bk

AIRCASTLE

Code (E)
1-R
2-Bk
3-W
4-S

ALARON (B & B IMPORT)

B1025
Code (R)
1-W
2-R
3-Bk
4-S

B1050

Code (E)		
1-Bk		1-S
2-R		2-W
3-W	or	3-R
4-S		4-Bk
		5-N/C

B1100
Code (R)
1-Bk
2-R
3-S
4-W

B1150

Code (R)		
1-W		1-W
2-S		2-S&R
3-Bk	or	3-Bk
4-N/C		4-N/C
5-R		5-N/C

B4600
Code (E)
1-S
2-W
3-Bk
4-R

B4700
Code (R)
1-W
2-S
3-Bk
4-R
5-N/C

ALLIED

A2567
Code (R)
1-W
2-R
3-Bk
4-S

ALPINE ELECTRONICS

BR640
Code (E)
1-W
2-S
3-Bk
4-R
5-
(jumper pins 4&5)

AMERICAN ELECTRONICS INC.

23 Plus
Code (R)
1-Bk
2-W
Sh-R&S

76-501 Spirit, 76-601 Freedom
Code (E)
1-Bk
2-R
3-S
4-W
5-N/C
6-N/C

A R A

CB7100
Code (E)
1-S
2-W
3-Bk
4-R

ARTHUR FULLMER CO.

2300, 2301, 2355
Code (E)
1-W
2-S
3-R
4-Bk

ASAHI

ACT 1914
Code (E)
1-W
2-S
3-R
4-Bk

ATLAS

210X
Code (R)
Rg-W
Tp-Bk
Se-R&S

AUDICOM 23

Model PT 23

Code (R)		1-S
W to B1	or	2-W
R&S to Gnd		3-R
Bk to Relay 1		4-Bk

AUDIOVOX

MCB 500
Code (S)
1-W
2-Y
3-Bk
4-R
5-Bu
6-S

MCB 1000
Code (R)
1-W
2-S&R
3-Bk
4-N/C
5-N/C

MCB 2000
Code (S)
1-W
2-N/C
3-Bk
4-R
5-Bu
6-S
Y not used

MCB 3000
Code (R)
1-W
2-N/C
3-R
4-S
5-Bk
6-N/C

AUTOMATIC RADIO

Plugs on all Automatic Radios must be fully assembled to be operational.

BCB1130
Code (R)
1-S
2-W
3-R
4-Bk

CBU2068
Code (E)
1-W
2-S
3-R
4-N/C
5-Bk

CBE2151

Code (E)		Code (R)
1-W		1-W
2-Bk		2-Bk
3-S	or	3-R
4-N/C		4-N/C
5-R		5-S

CBR2175
Code (E)
1-W
2-Bk
3-S&R
4-N/C
5-N/C
R may need to be on pin 5

CBH2265, CBL2270
Code (E)
1-S
2-W
3-Bk
4-R

BENJAMIN ELECTRONIC SOUND CO.

Concord 200
Code (R)
1-W
2-S&R
3-Bk
4-N/C
5-N/C

Concord 400
Code (E)
1-S
2-W
3-Bk
4-R

BLAUPUNKT

BCB5231
Code (E)
1-R
2-W
3-Bk
4-S

BOMAN-ASTROLINE

CB-515, CB-535, CB-555, CB-710, CB-740, CB-910, CB-930, CB-950
Code (E)
1-W
2-S
3-R
4-Bk

CB-750, CB-755
Code (R)
1-S
2-W
3-Bk
4-R

CB-770
Code (R)
1-W
2-S&R
3-N/C
4-Bk

CB-720, CB-720B
Code (E)
1-W
2-Bk
3-R
4-S

CBR-735
Code (R)
W to C129
S&R to Gnd
Bk to RL1

CBR-9700, CBR-9940
Code (E)
1-W
2-Bk
3-S
4-N/C
5-N/C

CBR-9900
Code (E)
1-W
2-Bk
3-S
4-N/C
5-R

CBR-9950
Code (E)
1-W
2-S
3-Bk
4-R
5-
jumper pins 4&5

BONSONIC

CB8
Code (E)
1-W
2-S
3-R
4-Bk

BROWNING

S-23 Series 2, 23S, 68T, Raven, FMF S9, Golden Eagle Mark II, Mark III, Eagle
Code (R)
1-W
2-Bk
Sh-R&S

May require modification of mobile mics to short white lead during receive. See page 9. Insert a 270K ohm resistor in series with the white lead.

Eaglette, Eaglette II consult factory.

Eaglette and Eaglette II require Sw.K.

LTD, Brownie, SST, SST 2, Sabre, Baron
Code (R)
1-S
2-W
3-Bk
4-R
LTD, Sabre, SST 2 require jumper from pin 1 to 4

CADRE (AMPHENOL)

500, 500C, 510B, 515, 525
Code (R)
1-Bk
2-W
3-S
4-R
5-N/C

510A
Code (R)

1-S		1-Bk
2-Bk		2-W
3-N/C	or	3-S
4-R		4-R
5-W		5-N/C

777
Code (R)
1-R
2-Bk
3-W
4-S

CARDON

Spitfire Mark II, Ventura
Code (R)
1-W
2-Bk
3-S
4-R

Spitfire, Satellite
Code (R)
1-S
2-W
3-Bk
4-R

Phantom
Code (R)
1-W
2-S&R
3-N/C
4-Bk

Tycoon CB 707
Code (R)
Wire color for color.

852 CB
Code (R)
1-W
2-S
3-R
4-N/C
5-Bk

Constellation, Vanguard
Code (R)
Rg-Bk
Tp-W
Sh-S&R

Command CB 727, Universe 747
Code (R)
1-W
2-Bk
3-R
4-S

Apache, Astro
Code (E)
1-W
2-S
3-R
4-Bk

CHANNEL MASTER

CB6830, CB6832
Code (E)
1-R
2-W
3-Bk
4-S

CITI-FONE

CD11/6, CD11/12, 99/6, 99/12
Code (R)
The above models have wired-in microphones. The TURNER microphones should be wired color for color.

SS, CD-5, CD-6, CD-7
Code (R)
Rg-W
Tp-Bk
Sh-R&S

CITIZEN

Model M2, B524, M5
Code (E)
1-W
2-Bk
3-S
4-N/C
5-R
B524 requires Sw.K

CLARICON

Activator 30800, Privateer 30600
Code (E)
1-S
2-W
3-R
4-Bk

Base 30850
Code (E)
1-S
2-N/C
3-Bk
4-W
5-R

Pirate
Code (R)

1-N/C		1-N/C
2-N/C		2-W
3-R&S	or	3-N/C
4-W		4-Bk
5-Bk		5-R

14-523
Code (R)
Wired color for color

30200
Code (E)
W-audio "hot"
S-Gnd
R-grounded in receive
Bk-grounded in transmit

RAIDER

Code (E)
1-W
2-S
3-R
4-Bk
Requires Sw.K

COBRA

B & K-Cobra Cam 88, Cobra 98
Code (R)
1-W
2-S
3-Bk
4-R
Jumper 2&4

— May require modification of mobile mics to short white lead during receive, see page 8.

Cobra V
Code (E)

Tur	Original Mic Color/Part
W	pre-amp
S	Gnd
R	output transformer speaker winding
Bk	Transmitter

Sw.K required

Cobra 23, 27
Code (E)
Wire as original except reverse R&Bk.
Sw.K required

Cobra 24
Code (R)

Tur	Original Mic Color/Part
W	PA/CB switch
S&R	Gnd
Bk	relay coil

Sw.K required

Cobra 25, 28, 130, 131, 132, 135, 880,
85, 32 XLR, 138 XLR, 139 XLR
Code (R)
1-S
2-W
3-Bk
4-R
85 requires Sw.K

Cobra 19, 21, 26, 139, 29, 89, 29 XLR
Code (E)
1-S
2-W
3-Bk
4-R

Cobra 138
Code (R)
Sh-S&R
Rg-Bk
Tp-W

Cobra 6
Code (E)

Tur	Original Mic Color/Part
R	speaker output transformer (T10)
B	to the circuit from diode (D8)
W	to circuit from R-31 (10K resistor)
S	to Gnd

COLT

290
Code (E)
1-W
2-S
3-R
4-Bk
Requires Sw.K

COMET

SFT-900
Code (E)
This set uses a mic plug having 4 unnumbered pins. When viewed from the rear, the arrangement can be loosely described as a "Y". Consider the pins to be numbered: Upper left-2, Upper right-3, Center-4, Bottom-1.
1-S
2-Bk
3-R
4-W
Sw.K required

COMEX

CCB770
Code (E)
1-W
2-N/C
3-N/C
4-R
5-Bk
6-S

COMMAND ELECTRONICS INC.

Satellite Super Transmitter
Code (E)
1-S
2-R
3-Bk
4-W

The Star
Code (R)

1-S&R		1-S&R
2-W		2-N/C
3-Bk	or	3-Bk
		4-W

COMMANDER

750
Code (E)
1-Bk
2-S
3-W
4-R
Must use external speaker

COMMANDO

CC2300, CC2310, CC4040, CC4086
Code (E)
1-W
2-S
3-R
4-Bk

2320, 2325

Code (R)	1-S
R&S to Gnd or	2-W
Bk to RL1	3-R
W to B1	4-Bk

2340, 2345
Code (S)
W to R63, C54
S&R to Gnd
Bk to C19, R8, C12
Y to Spkr Gnd
Bu to R83, D12

CC4050
Code (E)
1-R
2-S
3-N/C
4-W
5-Bk

CC4055
Code (S)
1-Y
2-R
3-S
4-W
5-Bk
6-Bu

COMMUNICATIONS POWER INC.

CP300, CP400
Code (R)
1-W
2-S
3-R
4-Bk

COMPUTING DEVICES

CDM-225
Code (E)
1-S
2-W
3-Bk
4-Gnd

CONTACT

CB-23 CH
Code (R)

1-W		1-Bk
2-R&S		2-R&S
3-N/C		3-N/C
4-Bk	or	4-W
5-N/C		5-N/C
6-N/C		6-N/C

Contact 6
Code (E)
1-Bk
2-N/C
3-W
4-S
5-R

CORNELL-DUBILIER

Mark X
Code (R)
1-W
2-Bk
3-S&R
4-N/C

COURIER

Rebel 40, Conqueror 40D, Caravelle 40D
Code (E)
1-R
2-W
3-Bk
4-S
R&S may need to be reversed

Spartan PLL40, Conqueror, Conqueror II, Caravelle, Caravelle II, Centurion, Spartan, Gladiator
Code (R)
Rg-Bk
Tp-W
Se-R&S

Cruiser

Code (E)		Code (E)		Code (R)
1-R		1-S		1-R
2-W		2-W		2-W
3-Bk	or	3-Bk	or	3-Bk
4-S		4-R		4-S

May require Sw.K

Classic II, Citation
Code (R)

1-S&R		1-Bk
2-W	or	2-S&R
3-Bk		3-W

Ranger-23, Traveller II
Code (E)
1-R
2-Bk
3-W
4-S

Classic
Code (R)
1-Bk
2-N/C
3-W
4-R&S

TR-3, TR-6, TR-12
Code (R)
1-W
2-S&Bk
3-N/C
4-R

TR-5, Tradesman, Traveller (USA)
Code (E)
The above units have a wired-in microphone. Wire color for color except reverse the red and black leads.

Royale
Code (R)
1-R
2-Bk
3-W
4-S

23 Plus, Fleet 30B, Courier 23
Code (R)
1-N/C
2-Bk
3-W
4-R&S

Courier 1M
Please contact factory

Redball, Classic III
Code (E)
1-R
2-W
3-Bk
4-S

Rebel +23
Code (E)

Tur	Original Mic Color/Part
R	purple
Bk	R
W	Y
S	chassis ground or where original shield went

Requires Sw.K

Courier Chief
Code (E)
1-S
2-R
3-Bk
4-W

Courier Chief 23
Code (E)
1-Bk
2-R
3-S
4-W

Comet 23
Code (R)
1-S
2-R
3-Bk
4-W

CRAIG

L101
Code (R)
1-N/C
2-W
3-S&R
4-N/C
5-Bk

L131
Code (R)
1-N/C
2-W
3-S
4-R
5-Bk

4101, 4102, 4103, 4104, 4201
Code (E)
1-N/C
2-W
3-S
4-R
5-Bk

DELCO

CBD10, CBD20, CB20A
Code (E)
1-W
2-S
3-R
4-Bk

DELTA TRONIX

D1325RF
Code (E)
1-W
2-S
3-R
4-Bk

DEMCO ELECTRONICS

T110A, Travelier, Satellite
Code (R)
1-S&R
2-W
3-Bk

Revelle
Code (R)
Rg-W
Tp-Bk
Sh-R&S

Revelle 23
Code (E)
W-mic audio
R-grounded in receive
Bk-grounded in transmit
S-Gnd

Super Satellite, Star
Code (E)
1-S
2-R
3-Bk
4-W

DRAKE

TR3, TR4, T4XB, T4XC
Code (R)
Rg-W
Tp-Bk
Se-R&S

EBINA

D1325RF
Code (E)
1-W
2-S
3-R
4-Bk

ECHO

99'er
Code (R)
W to Negative side of C129
Bk to top of relay RY-1
R&S to Gnd

Excellenz
Code (E)
1-R
2-Bk
3-W
4-S

E F JOHNSON

CAUTION: Avoid contact between any metal microphone case and the radio case

Viking I, Viking II
Code (E)
Wire color for color

Messenger I, Messenger III
Code (R)
Wire color for color

Messenger III 242-143, 323 New Production
Code (R)

Tur	Original Mic Color/Part
W	W
Bk	Bu
R	R
S	Y, Bk, S

Messenger 100, 110, 123, 123GRS
Code (E)
Wire color for color, except reverse red and black.

Messenger 123A, 123B, 350, 125, 120, 120A, 323A, 121, 122, 123SJ, 191, 4120, 4140, 4145
Code (S)
Wire color for color

Messenger 124, M, 202, White Face, Messenger II
Code (E)
1-W
2-R
3-Bk
4-S

Messenger 303, 600
Code (R)
1-W
2-R
3-Bk
4-S

Messenger 300, 320, 323, M
Code (R)
Wire color for color

Messenger 250, 4170, 4175
Code (S)
1-W
2-R
3-Bk
4-Y
5-Bu
Sh-S

352, 4740
Code (R)
1-W
2-Bk
3-N/C
4-N/C
5-R
Sh-S

Viking Ranger
Code (R)
1-W
2-N/C
Sh-S
Key Jack
Tp-Bk
Sh-R

223
Code (E)
1-W
2-R
3-Bk
4-S
5-N/C

351
Code (R)
1-S
2-W
3-Bk
4-R

Messenger 130, 132
Consult factory

EICO

753, 770, 771, 772, 777, 779, 779A
Code (R)
1-Bk
2-W
Sh-R&S

7723
Code (E)
1-W
2-S
3-R
4-Bk

7923
Code (R)

Tur	Original Mic Color/Part
W	(5) on schematic (mic)
R	RY side PTT on schematic
Bk	T9 side PTT on schematic
S	RY3 side of microphone

Note: Check the input impedance of your radio as some EICO models have very high impedance and may not perform well with Turner mics.

ELECTROPHONIC

CB700
Code (E)
1-W
2-S
3-R
4-Bk

ERIC

200
Code (E)
1-S
2-W
3-Bk
4-R

EVERSONIC

DK222
Code (R)
W to S4-1
R&S to Gnd
Bk to relay S4-2

1125
Code (E)
1-W
2-S
3-R
4-Bk

1280
Code (E)
1-W
2-S
3-Bk
4-R

ST22
Code (E)
1-W
2-S
3-R
4-N/C
5-Bk

HA23C

Code (R)		Code (R)
1-W		1-W
2-Bk&S		2-S&R
3-R	or	3-N/C
4-N/C		4-N/C
5-N/C		5-Bk

EWT

ECB14
Code (E)
1-W
2-S
3-Bk
4-N/C
5-R

FANNON

Fanfare 880DF, Caravelle 40D, Conqueror 40D, Fanfare Rangler 40D, 125F, 182F, 184DF, 180, 185DF
Code (E)
1-R
2-W
3-Bk
4-S
S&R may have to be reversed

Fanfare 100F
Code (E)
1-S
2-W
3-Bk
4-R

Fanfare 120
Code (E)

Tur	Original Mic Color/Part
R	Purple (lo side of T10)
Bk	R (C57 and R59+)
W	Y (L15)
S	chassis ground or where original shield went

M2300, XM2300
Code (E)
1-R
2-Bk
3-W
4-S

May require modification of mobile mics to short white lead during receive. See page 8.

SFT400, SFT500
Code (E)
1-W
2-S
3-Bk
4-N/C
5-R

Insert a 4.7K ohm resistor in series with the microphone white lead of desk mics.

SFT600
Code (R)
1-R&S
2-W
3-Bk

SFT800A
Code (E)
S-circuit ground
W-audio amp
R-output transformer speaker winding
Bk-2-volt source

IC3000, IC5000
Code (R)
Tp-W
Sh-S
R&Bk not used

Fanfare 700
Code (R)
1-W
2-R&S
3-Bk
4-N/C
5-N/C
Requires Sw.K

Insert a 4.7K ohm resistor in series with the microphone white lead of desk microphones.

SFT900
Code (E)
1-S
2-W
3-R
4-Bk
Requires Sw.K

Fanfare 100
Turner ..... Pin # Original mic color/part
R ..... 1.....Purple
Bk ..... 3.....R
W ..... 2.....Y
S ..... 4.....chassis ground or where original microphone shield went

Fanfare 880, 350F
Code (R)
Rg-Bk
Tp-W
Sh-R&S

Fanfare 330
Code (R)
1-W
2-S
3-Bk
4-R

FIELDMASTER

FK CB002S
Code (E)
1-R
2-Bk
3-W
4-S
5-N/C

FK CB001A, FK CB005
Code (E)
1-R
2-Bk
3-W
4-S

CB6832
Code (E)
1-R
2-W
3-Bk
4-S

Micro Mini 6, 3, 23
Code (S)
1-W
2-Y
3-Bk
4-R
5-Bu
6-S

TR-16
Code (S)
Consult Factory

TR-18M
Code (R)
1-W
2-R&S
3-Bk

TR-20
Code (R)
Rg-W
Tp-Bk
Sh-R&S

TR-17
Code (R)
1-W
2-S
3-Bk
4-N/C
5-R

FOX

MR21
Code (R)
1-W
2-R&S
3-N/C
4-Bk

FULLCOM

2301
Code (E)
1-W
2-S
3-R
4-Bk

GALAXY

GT550
Code (R)
Rg-W
Tp-Bk
Se-R&S

GEMTRONICS

GTX 3000
Code (E)
1-W
2-Bk
3-S
4-N/C
5-R

CTX230
Code (E)
1-W
2-S
3-Bk
4-R
Requires Sw.K

GTX 5000
Code (R)
1-W
2-Bk
3-S&R
4-N/C

GTX-23, GTX-36, GTX-3323
Code (E)
1-W
2-S
3-R
4-Bk

GTX-2300
Code (R)
1-W
2-Bk
3-R&S
4-N/C

GTX-2325
Code (R)
1-W
2-Bk
3-S
4-R

GENERAL ELECTRIC CO.

Plugs on all GE Radios must be fully assembled to be operational.

3-5800, 5801, 5801A, 5809, 5810, 5810A, 5810B, 5811, 5811A, 5811B, 5818, 5871
Code (E)
1-S
2-N/C
3-Bk
4-W
5-R
Requires Sw.K

3-5801B, 5802, 5812A, 5819, 5819A, 5821, 5821A, 5825A, 5869
Code (E)
1-W
2-S
3-R
4-Bk
Requires Sw.K

4ET7D1, 4ET7D2, 4ET7D3
Code (R)
1-R&S
2-W
3-Bk
4-N/C
May require Sw.K

GENERAL MOTORS

GM23B, GM23M, GMCBD10A
Code (E)
1-W
2-S
3-R
4-Bk
GM23B requires Sw.K

GM4120
Code (S)
J10-W
J11-Y
J12-S
J13-Bu
J14-R
J15-Bk

GENERAL RADIOTELEPHONE

VS-4
Not compatible with amplified mics.

MC-5
Code (R)
Rg-W
Tp-R
Sh-Bk&S

MC-7, MC-8, MC-6
Code (E)
1-R
2-Bk
3-S
4-W
Disconnect 1.5K resistor (R44) inside radio on MC-7 and MC-8.

MC-9
Code (R)
1-N/C
2-Bk
3-R&S
4-W

MC11-A
Code (R)
1-W
2-Bk
3-R&S
4-N/C

SB-72
Code (R)
1-W
2-R&S
3-Bk
4-N/C
If hum exists, disconnect R-1 (18K ohms) inside unit.

GLOBE ELECTRONICS

9000, 9001
Code (R)
1-W
2-R
3-Bk
4-S

CB 100, 100A
Code (R)
Tur ..... Original Mic Color/Part
W ..... signal lead
R&S ..... Grounded
Bk ..... becomes grounded in transmit position

CB200
Code (R)
1-W
2-Bk
Sh-R&S

President VIII
Code (R)
Rg-W
Tp-Bk
Sh-R&S

GONSET

Communicator 4
Code (R)
Rg-W
Tp-Bk
Se-R&S

GRANADA

CB4
Code (E)

1-W		1-W
2-S		2-S
3-Bk	or	3-R
4-N/C		4-Bk
5-R		

CB6

Code (E)	(E)		(R)
1-S	1-S		1-S&R
2-N/C	2-W		2-W
3-W or	3-R	or	3-N/C
4-R	4-Bk		4-Bk
5-N/C			
6-Bk			

CB7

Code (E)	(E)		(R)
1-S	1-R&S		1-S&R
2-W or	2-W	or	2-W
3-R	3-N/C		3-N/C
4-Bk	4-Bk		4-Bk

CB27
Code (E)
1-R&S
2-W
3-N/C
4-Bk

Prominent, 1125
Code (E)
1-W
2-S
3-R
4-Bk

BCB1130

Code (R)		Code (R)
W to B1		1-S
R&S to Gnd	or	2-W
Bk to RL1		3-R
(relay)		4-Bk

FCB770
Code (S)
1-W
2-N/C
3-Bu
4-S
5-Bk
6-R

GREAT

GT418
Code (E)

1-S		1-R
2-W	or	2-Bk
3-R		3-W
4-Bk		4-S
5-N/C		

HALLICRAFTERS

CB20
Code (S)
W to W
S to S
Bk to Bu
R to Bk
Bu to R
Y-not used

HCM275
Code (S)
1-W
2-S
3-Bk
4-R
5-Bu
Y-not used

CB-12, CB-14
Code (R)
Wire color for color. Insert a 4.7K ohm resistor in series with the white lead of desk mics.

CB-3, CB-3A
Code (R)
1-W
2-Bk
Sh-R&S

CB-5, CB-5A, CB-5 Mark II, CB-10
Code (R)
Wire color for color

CB-21
Code (R)
Tur ..... HAL
W ..... R
S ..... S
Bk ..... W
R ..... Bk

CB-7, CB-9, CB-17, CB-19
Code (E)
Same as original microphone, if original mic number is 085-000234.

May require modification of mobile mics to short white lead during receive. See page 8.

CB-17, CB-19
Code (E)
Same as original mic except reverse R and Bk leads if original mic number is 085-000276.

May require modification of mobile mics short white lead during receive. See page 8.

CB-24
Code (R)
Tur ..... Original Mic Color/Part
R&S ..... common Gnd
W ..... mic amp Q-9
Bk ..... relay coil

CB-1
Code (R)
Pin-W
Sh-S
R&Bk-N/C

FPM300
Code (R)
Rg-W
Tp-Bk
Sh-R&S

HAMMERLUND

CB23
Code (R)
W to R
B to W
R&S to B&S

HANDIC

230
Code (S)
1-Y
2-R
3-S
4-W
5-Bk
6-Bu

235
Code (S)
W to orange
S to S
Bk to Bk
Bu to Violet
R to W
Y to R
Consult factory in case of difficulties

240
Code (S)
1-W
2-Bu
3-S
4-Y
5-Bk
6-R

2305
Code (R)

1-S		1-N/C
2-W	or	2-W
3-R		3-Bk
4-Bk		4-R&S or

Code (E)
1-W
2-R
3-N/C
4-N/C
5-Bk
6-S

HEATH CO.

GW14, GW10, MW34
Code (R)
Tur ..... Original Mic Color/Part
W ..... mic audio
Bk&R ..... relay control
S ..... Gnd

GW42
Code (R)
1-S
2-W
3-R
4-Bk

GW12, GW22, GW11A, GW11D, GW32
Code (E)
Tur ..... Original Mic Color/Part
W ..... mic audio
Bk ..... grounded in transmit
R ..... grounded in receive
S ..... Gnd

HW18-1, 18-2
Code (E)
Wire color for color

SB-101, SB-102
Code (R)
1-W
2-Bk
Sh-R&S

HITACHI

CM4850H
Code (E)
1-S
2-W
3-Bk
4-R

CM2410A
Code (E)
1-S
2-N/C
3-W
4-Bk
5-R

CM2430H, CM4800H, CM6700H
Code (E)
1-S
2-N/C
3-Bk
4-W
5-R
Require Sw.K

HY-GAIN

623, 623A, 623PR
Code (R)
Rg-W
Tp-Bk
Se-R&S

23+
Code (R)
1-W
2-Bk
3-R
4-S

670, 670A, 671, 671A
Code (S)
1-W
2-Bu
3-R
4-S
5-Bk
Y-not used

672, 672A, 673, 673A, 674, 674A
Code (R)
1-W
2-R&S
3-Bk
4-N/C

1A, 670B, 671B, 672B, 673B, 674B, 681, 682, 682A, 683, 2680, 2681, 2682, 2683, 2683A, 2701, 2702, 2703, 2705, 3077, 3078, 3084, 3087, 3107
Code (E)
1-W
2-Bk
3-S
4-N/C
5-R
Sw.K required

CB6830, CB6832
Code (E)
1-R
2-W
3-Bk
4-S

INTERNATIONAL CRYSTAL MFG.

50A-1, 50AN, 59, 100A, 440, 460, CTZ-880
Code (R)
1-W
2-S
3-Bk
4-R
Jumper 2&4

MO-23
Code (R)
1-Bk
2-R&S
3-W
4-N/C

CTZ-50
Code (R)
1-W
2-S
3-N/C
4-Bk
5-jumper to pin 2

I T T

CB2300M
Code (S)
1-W
2-Y
3-Bk
4-R
5-Bu
6-S

CB4000M
Code (E)
1-S
2-W
3-Bk
4-R

JANA

KJ-CB-32-MK4
Code (R)
Rg-W
Tp-R
Se-S&Bk
R&Bk may need to be reversed

KJSSB-100
Code (R)
1-Bk
2-R&S
3-W
4-N/C
5-N/C
BK & W may need to be reversed.

J C PENNEY CO.

985-6060 Pinto 23B, 981-6051 Golden Pinto
Code (R)
1-R&S
2-W
3-Bk

981-6051, 981-6220
Code (E)
1-S&R
2-W
3-Bk
4-N/C
See note on 6212A

981-6220, 981-6235, 981-6213, 981-6210A, 981-6230, 981-6212, 981-6212A, 981-0607, 981-6236, 981-6237, 981-6214, 981-6218, 981-6237A
Code (E)
1-S
2-W
3-Bk
4-R

981-6075 Pinto SSB
Code (E)
1-R
2-W
3-Bk
4-S

981-6200
Code (E)

Turner	Original Mic Color/Part
W	W
S	S
R	R
Bk	Green

Insert a 4.7K ohm resistor in series with white lead of desk mics.

985-6050 Pinto 23
Code (R)
1-S&R
2-Bk
3-W
Insert a 4.7K ohm resistor in series with the white lead of desk mics.

985-6050 Pinto Jr.
Code (R)
1-Bk
2-W
3-R&S

981-6240, 981-6240A, 981-6241
Code (R)
1-S
2-W
3-Bk
4-R

981-6211A
Code (R)

1-W		1-R&S
2-R&S	or	2-W
3-Bk		3-N/C
4-N/C		4-Bk

981-6201
Code (R)
1-W
2-S&R
3-Bk
4-N/C
If wired in, color for color, or
Code (E)
P14-S
P15-W
P16-R
P17-Bk

981-6217
Code (E)
1-W
2-S
3-Bk
4-R

981-6217B
Code (E)
1-W
2-S
3-Bk
4-R
5-N/C
6-N/C

6203
Code (E)
1-S
2-W
3-Bk
4-R
5-N/C

6210
Code (E)
1-W
2-S
3-R
4-Bk

6212A
Code (E)
1-S&R
2-W
3-Bk
4-N/C
Some model 6051 and 6220 radios may wire like the above

JET SOUNDS

CB7000
Code (R)
1-W
2-R
3-Bk
4-S

CB7150
Code (E)
1-W
2-Bk
3-R
4-S

J I L CORP. OF AMERICA

Combo 23, JN852CB, JN606CB
Code (R)
1-W
2-S
3-R
4-N/C
5-Bk

M3, M5, B524
Code (E)
1-W
2-Bk
3-S
4-N/C
5-R

KALIMAR INTERNATIONAL CORP.

K740
Code (E)
1-S
2-W
3-Bk
4-R

K747

Code (R)		1-S
W to B1	or	2-W
Bk to relay		3-R
S&R to Gnd		4-Bk

KENWOOD

TS520, TS900
Code (R)
1-W
2-R
3-Bk
4-S

KNIGHT (Allied Radio)

KM2590
Code (E)
W to W
R to Bk speaker transformer
S to Bk Gnd
Bk to R

KOLTEK

Code (R)
1-S
2-W
3-R
4-Bk

KRACO ENTERPRISES INC.

KCB2310, 2320, 2320A, 2330, 2330A, 2330B, 2340, 2345, 2355, 4010, 4020, 4030, 4040, 4045, 4088
Code (E)
1-W
2-S
3-R
4-Bk
Sw.K required

1307
Code (S)
1-W
2-Y
3-Bk
4-R
5-Bu
6-S

1401
Code (R)
1-S
2-W
3-R
4-Bk

1300
Code (E)
W to L15
S to Gnd
Bk to C57
R to T10

2370
Code (R)
1-B
2-N/C
3-R&S
4-N/C
5-W
6-N/C

2390
Code (R)
1-W
2-S&R
3-Bk
4-N/C
5-N/C

4003, 4004
Code (E)
1-W
2-S
3-R
4-Bk
5-N/C

4075
Code (E)
Tur to Kra
W to Y
R to Yellow/green
S to S
Bk to orange

KRIS

23+
Code (R)
1-W
2-Bk
3-S
4-R
Insert .01 mfd. capacitor in series with the white lead for desk mics.

T-23, 99'er — Wired-in mic
Code (R)
Turner to Kris
W-negative side of C129
Bk-top of relay Ry-1
R&S-Gnd

Vega
Code (R)

Turner	Original Mic Color/Part
S	S
W	green or Y
R	R
Bk	Bu or purple

XL-23, XL-23A
Code (R)
1-W
2-S&R
3-Bk
4-N/C
See Victor 1 for alternate wiring.

XL-70
Code (R)
1-W
2-Bk
3-S
4-R
Pins 3 and 4 may be reversed

Victor I, Victor II, Valiant, Ventura, XL25, XL30, XL40, XL45, XL50
Code (E)
1-W
2-S
3-Bk
4-R
22K ohm resistor may be needed in series with white lead for desk mics.

KRYPTON-BETA

ACT1914, ACT2000
Code (E)
1-W
2-S
3-R
4-Bk

KYODO-SAWTRON

Sawtron 770, 790
Code (R)
1-S
2-W
3-Bk
4-R

LAFAYETTE

Telsat 1023, Micro 66
Code (R)
1-W
2-R
3-Bk
4-S
5-N/C
S&R reversed on some 1023 models

Telsat SSB75, Micro 223, HB640, HB650, HB740, HB750, HB940, HB950, Telsat 1050, Telsat 1140, SSB100
Code (E)
1-W
2-Bk
3-S
4-N/C
5-R
If the above does not work, use the following:

Publicom 1, SSB80, SSB100, SSB120, SSB140, HB95, HB540, HB550, HB640, Telsat 1000, Micro 723, 923, Questor Mark I
Code (S)
1-W
2-Bu
3-R
4-S
5-Bk
Y-not used

Comstat 35
Code (R)
1-W
2-R
3-Bk
4-S

Com-phone Mark II
Code (R)
1-W
2-R
3-S
4-Bk
5-N/C

HB-700
Code (S)

Tur	Original Mic Color/part
Y&S	S or Bk
W	R
R	W
Bk	green or Bk
Bu	Bu

HB-400
Code (E)
1-W
2-Bk
3-R
4-S
or, wire color for color

HA-450, HA-750, HB-555, HB-23A, HB-425, HB-500A, HB-501, HB-502, HB-525A, B, C, D, E, F, HB-600A, HB-625A, HE-20D, HE-20T, Telesat: 23, 50, SSB-25, 150, 920, 924, SSB-50, Micro 12, 23, 925, SSB-50A, 925
Note: These sets use a mic plug having 4 un-numbered pins. When viewed from the rear the arrangement can be loosely described as a "Y". Consider the pins to be numbered: upper left - 2, upper right - 3, center - 4, bottom - 1
Code (R)
1-Bk
2-R
3-S
4-W
Occasionally a jumper is required between Pins 2 and 3.

HB-444, Comstat 19, Comstat 23, Mark V, Mark VI, Comstat 35
Code (E)
1-W
2-Bk
3-R
4-S
Occasionally a jumper is required between Pins 3 and 4.

Comstat 25A, B
Code (R)
1-W
2-Bk
3-R
4-S
25A may be Code (E)

HA-460
Code (R)
1-W
2-Bk
3-N/C
4-R&S
May require modification of mobile mics to short white lead during receive. See page 8.

HB-111, HB-200, HB-222, HE20, HE20A, WX, AWX, B, C, HE-43C
Code (R)
1-Bk
2-R
3-W
4-S
5-N/C

Com-Phone 23
Code (R)
1-W
2-Bk
3-N/C
4-S&R
5-N/C

Comstat 9, HB-115
Code (E)
1-R
2-N/C
3-W
4-S
5-Bk

HE-15A, HE-15B
Code (R)
1-N/C
2 & 4-S
3-W
5-N/C

HE-90, HB-333, Some HE-20
Code (E)
1-Bk
2-N/C
3-W
4-S
5-R

HE-15, HE-16, HE-18
Code (R)
center pin-W
Sh-S
R&Bk-N/C

LAKE

336
Code (S)
W to R63 & C54
R&S to Gnd
Y to T2
Bu to D12
Bk to C12, C19

GT418
Code (E)
1-S
2-W
3-R
4-Bk
5-N/C

523, 1125, 1325
Code (E)
1-W
2-S
3-R
4-Bk

ME805, 806
Code (E)
1-W
2-Bk
3-R
4-S

LEAR JET

CB1
Code (S)
1-Y
2-S
3-R
4-W
5-Bk
6-Bu

MARS RADIO CORP.

M353, M358
Code (S)
W to R63, C54
R&S to Gnd
Y to T2
Bu to D12
Bk to C12, C19

Con400, M374
Code (E)
1-R
2-S
3-N/C
4-W
5-Bk

Con450, M368, M375
Code (S)
1-Y
2-R
3-S
4-W
5-Bk
6-Bu

MARK

Invader
Code (R)
Tp-Bk
Rg-W
Sh-R&S

MASON

CB23
Code (E)
1-W
2-S
3-R
4-Bk

MECTRON

ME400, ME401A, ME402
Code (E)
1-W
2-S
3-Bk
4-R

MEDALLION

63-200, 63-240
Code (E)
1-W
2-S
3-Bk
4-R
5-
jumper pin 4 to 5

MEISEI

C7510
Code (E)
1-W
2-S
3-R
4-Bk

MERITON

RS5111
Code (E)
1-R
2-Bk
3-W
4-S

MICRO 23

MS24
Code (E)
1-W
2-S
3-Bk
4-N/C
5-R

MIDLAND

13-830, 852, 853, 857, 857B, 858, 862, 862B, 863B, 866, 867, 879B, 882B, 882C, 892, 976

77-825, 830, 853, 857, 882,
Code (E)
1-W
2-S
3-R
4-Bk
Sw.K required

13-888, 13-888B

77-888
Code (S)
1-W
2-R
3-Bu
4-Bk
5-S
6-N/C
Y not used

13-863, 881B, 887, 893, 895, 898, 898B
Code (R)
1-W
2-R&S
3-N/C
4-Bk
Some models require Bk on pin 3

77-883
Code (E)
1-W
2-S
3-Bk
4-R
5-N/C
6-N/C

13-884, 861

77-861
Code (E)
1-W
2-S
3-R
4-Bk
5-N/C
Sw.K required
May require external speaker

13-845, 870B, 870C, 870D, 872, 873, 874, 875, 876, 877, 878, 880, 881, 885, 890, 891
Code (R)
Rg-Bk
Tp-W
Se-R&S

13-883, 13-883B
Code (E)

1-W		1-W
2-S		2-Bk
3-Bk		3-N/C
4-R	or	4-S
5-N/C		5-R
6-N/C		

13-886
Code (E)
1-W
2-Bk
3-S
4-N/C
5-R
Sw.K required
Hand set must be off hook

13-864, 13-869, 13-879
Code (E)
1-W
2-S
3-Bk
4-R
Insert a 4.7K ohm resistor in series with the microphone white lead of desk mics for 13-864, 13-879.

13-865 & 13-868
Code (R)
Tp-Bk
Rg-W
Sh-R&S

13-869, 13-854, 13-801, with wired-in mic
Code (E)

Tur	Original Mic Color/Part
W	R
R	Bk
Bk	W
S	S

13-130, 13-133B, C, E, 13-720, 13-790
Code (R)
W-Tp
S-Sh
R&Bk-N/C or Sh

13-150
Code (E)
Tur ..... Original Mic Color/Part
W ..... audio amp thru relay contacts
Bk ..... relay coil
R ..... 12.6 volt bus
S ..... chassis Gnd

13-160 & 13-855
Code (E)
Color for color except reverse R&Bk leads.

13-860
Code (R)
1-W
2-R&S
3-Bk

13-894, 13-896
Code (S)
1-W
2-S
3-Bu
4-R
5-Bk
Y-not used

13-882
Code (S)
1-W
2-Bu
3-R
4-S
5-Bk
Y-not used

MIDSTATE

Cub II MT7500
Code (E)
1-S
2-W
3-Bk
4-R

MONTGOMERY WARD

Gen 702A, Airline 774
Code (R)
1-W
2-S&R
3-N/C
4-Bk

MOTOROLA INC.

CB1124, 1125
Code (E)
1-Bk
2-R
3-S
4-W

Mocat 2020, 4020
Code (E)
1-Green
2-W
3-Bk
4-R
Use J+350,

NUVOX

5010
Code (R)

1-W	1-W	1-W
2-S or	2-R&S or	2-R
3-Bk	3-Bk	3-S
4-R		4-Bk

TC5020
Code (S)
1-W
2-Y
3-Bk
4-R
5-Bu
6-S

7000
Code (R)
1-W
2-R
3-S
4-Bk
Pins 3 & 4 are tied together inside the radio

OLSON

409
Code (R)
1-W
2-S&R
3-BK
4-N/C
5-N/C

PACE

8010, 8015
Code (R)
1-Bk
2-N/C
3-S&R
4-W

8010A, 8015A, 8015B
Code (E)
1-Bk
2-S&R
3-N/C
4-W

BI-3100, 113, 144, 145, 161, 162, 166, 1000B, 1000M, 8041, 8046
Code (R)
1-W
2-S&R
3-N/C
4-Bk
All require Sw.K except the 166

CB76, 2300C, 2300CA, DX2300B
Code (E)
1-Bk
2-R
3-S
4-W
Sw.K required
Desk mics on the DX2300B are not recommended.

BI-35
Code (R)
1-R
2-Bk
3-S
4-W

BI2000-35
Code (R)
W-connect to RFC5 and R36 junction
S-audio and transmit Gnd
R - Ryl
Bk - Rx Gnd

I, II, II-S, 100, 200, +23, 2300 Early Model
Code (E)
Tur ..... Original Mic Color/Part
W ..... volume control and/or via PA/CB switch
Bk ..... relay coil and/or via PA/CB switch
R ..... receiver Gnd
S ..... transmitter Gnd
Sw.K required

5000
Code (R)
6-R
7-S
8-W
9-Bk

TA2300, TA2300B
Code (E)
1-W
2-S
3-R
4-Bk

2376
Code (E)
Tur ..... Original Mic Color/Part
W ..... audio amp
S ..... chassis Gnd
R ..... circuit Gnd
Bk ..... relay coil
Sw.K required

Auto Mate
Special switching — consult factory

Side Talk
Code (R)
1-W
2-S
3-R
4-Bk

10-2
Code (R)
R&S-Gnd
W-connect to R44
Bk-connect to Gnd contact point on relay

100-S, 123A, 123, 133, 100-ASA, 143
Code (R)
1-Bk
2-R&S
4-W
3, 5, & 6-N/C
100S, 123A, 133, 143 require Sw.K

143, B1-120
Code (R)
1-Bk
2-S&R
3-N/C
4-W

2376A, B, 223-Wired-in Microphone
Code (R)
Tur ..... Original Mic Color/Part
W ..... W
Bk ..... R
R ..... Bk
S ..... S
223 requires Sw.K
Some models 2376A require Code (E) switching

1023, Side Talk 1023B
Code (R)
W-Tp
Bk-Rg
R&S-Sh

2300
Code (E)
(Five Pin)
1-N/C
2-Bk
3-R
4-S
5-W

(Four Pin)
1-Bk
2-R
3-S
4-W
Some model Pace 4-pin connections, the R&Bk wires must be reversed.

Pace 130
Code (R)
1-W
2-S&R
3-N/C
4-Bk
In some cases reverse Bk&W.

PAL ELECTRONICS

Roadrunner Series, Coyote
Code (R)
1-W
2-Bk
3-R
4-S
In some cases 3 and 4 need to be jumped

PALOMAR

Digicom 100
Code (R)
1-W
2-Bk&S
3-R
In some cases pins 2 and 3 need to be reversed.

Skipper 71, 71B, 73
Code (R)
Bk-Tp
W-Rg
R&S-Sh

21, 41, 49, 4100
Code (E)
1-S
2-W
3-Bk
4-R

PANASONIC

2300, RJ3200
Code (E)
1-R
2-W
3-Bk
4-S
Sw.K required
See "Squeal during transmit" if need be

RJ3050, 3100, 3150, 3250
Code (E)
1-W
2-S
3-Bk
4-R
5-N/C

CR-B1717EU, 4700, 4701, 4737, 4747, 4748
Code (E)
1-W
2-Bk
3-S
4-N/C
5-R

PEARCE SIMPSON

Simba, Cheetah, Bengal
Code (R)
1-Bk
2-W
3-R&S
10K ohm ¼ watt resistor required in series with white lead when using desk mics.

Following are older models of Simba, Cheetah and Bengal Bearcat 23, Bearcat 23B, Tiger 23, Cougar, Simba SSB, Cheetah SSB, Panther SSB, Bengal SSB, Cougar 23, Simba, Cheetah, Director 23
Code (R)
1-W
2-R&S
3-Bk
Insert 10K ohm resistor in series with white lead for desk mics.

Tiger 23B, Tiger 23C, Cougar 23B, Bobcat 23C, Bearcat 23C, Super Lynx, Tiger 40A, Bobcat 23E, Tiger Mark IV, Puma 23C, Lynx, Puma, Tiger Mark II
Code (E)
1-W
2-S
3-R
4-Bk
For Bearcat 23C insert 10K ohm resistor in series with white lead for desk mics.

Lynx, Puma, Tiger 40A require Sw.K

Tomcat 23, Tomcat
Code (E)

Tur	Original Mic Color/Part
S	S
R	violet
W	Y
Bk	R

Sentry
Code (R)

Tur	Original Mic Color/Part
R&S	Gnd
Bk	relay coil
W	through C22 to Q4

Insert 4.7K ohm resistor in series with the white lead of desk mics.

Guardian 23, Guardian 23B, Escort
Code (R)
1-W
2-Bk
Sh-R&S

Director, Escort II
Code (R)
1-W
2-N/C
3-S&R
4-N/C
5-Bk
Install 100K ohm ¼ watt resistor in series with white lead on desk mics.

2301
Code (E) Wired-in mic
Wire color for color except reverse R&Bk

2302, Pussycat
Code (E)
1-S
2-W
3-R
4-Bk

Alleycat 23
Code (E)

Tur	Original Mic Color/Part
R	violet
Bk	R
W	Y with Bk cover
S	S

Bobcat 23-D
Code (E)
1-Bk
2-W
3-R
4-S

Wildcat II
Code (S)
1-Bu
2-Bk
3-Y
4-S
5-W
6-R
See M+3 Special data sheet or call factory for wiring change inside mic.

Panther, Companion IV
Code (S) Only Mobile, six-wire mics will function with this radio.

Tur	Original Mic Color/Part
Bu	R
R	Bk
Bk	orange
W	W
Y	Y
S	green

Lion
Code (E)
1-R
2-W
3-S
4-Bk

Puma 23B
Code (E)
1-Bk
2-R
3-S
4-W

Pirate
Code (R)

1-N/C		1-N/C
2-N/C		2-W
3-R&S	or	3-N/C
4-W		4-Bk
5-Bk		5-R&S

Tomcat 23B
Code (S)

Tur	P/S
Bu	R
R	Violet
Bk	W
W	Y
S	S

PIONEER ELECTRONICS CORP.

GT1100, GT6600
Code (E)
1-W
2-S
3-Bk
4-R
5-
jumper 4 & 5

POLYCOM

Senior 23
Code (E)
1-W
2-S
3-Bk
4-R

PONY

CB-F1BST
Code (R)
1-W
2-S
3-Bk
4-N/C
5-R

CB78
Code (E)
1-W
2-S
3-R
4-Bk

POWER

CB2300

Code (R)		1-S
W to B1	or	2-W
Bk to relay		3-R
R&S to Gnd		4-Bk

PRECOR

Code (E)
1-W
2-S
3-R
4-Bk

PRESIDENT

Dwight D., Grant, Honest Abe, John Q.,
Teddy R., Washington, Zachary T.
Code (E)
1-S
2-W
3-Bk
4-R
Add 4.7K ohm resistor in series with the white lead.

PROMINENT

MS24
Code (E)
1-W
2-S
3-Bk
4-N/C
5-R

RANDIX 555

Code (R)
W to R81
R&S to Gnd
Bk to RL1

RAIDER

4020
Code (E)
1-W
2-S
3-R
4-Bk

RAY JEFFERSON

CB805

Code (R)		1-S
W to B1	or	2-W
S&R to Gnd		3-R
Bk to relay RL1		4-Bk

CB840
Code (E)
1-W
2-S
3-R
4-Bk
5-N/C

CB711
Code (E)
Tur ..... RJ
R ..... Bk or violet
Bk ..... W or R
W ..... R or Y
S ..... S

CB705
Code (E)
1-W
2-S
3-Bk
4-R

CB905
Code (R)
W-Rg
Bk-Tp
R&S-Sh

R C A

Mark VIII
Code (E)
Wire color for color

Mark IX (010)
Code (E)
1-R
2-S
3-W
4-Bk

14T100, 14T200, 14T260, 14T270, 14T275, 14T300, 14T301, 14T302, 14T303, 14T304, 14T305, 14T400
Code (E)
1-W
2-S
3-R
4-Bk
Sw.K required

REALISTIC

Plugs on some Realistic radios must be fully assembled to be operational.

TRC-8D
Code (E)
1-Bk
2-R
3-W
4-S

TRC-9, TRC-9A, TRC-11
Code (S)
Consult Factory

TRC-47, TRC-48, TRC-49, TRC-57
Code (R)
1-S&R
2-N/C
3-Bk
4-W
5-N/C

TRC-50/Mini 23, TRC-24A, TRC-23C, TRC-30, TRC-55, TRC-24B, TRC-24C, TRC-30A, TRC-52, TRC-68, TRC-200, TRC-67, TRC-152, TRC-56, TRC-452
Code (E)
1-S
2-N/C
3-Bk
4-W
5-R

On some models TRC-24A, pins 2 and 3 should be reversed. On TRC-30A and TRC-30 the microphone plug must be assembled before use.
Speaker switch must be in "both" position for model 56.

TRC-46
Code (R)
1-R&S
3-Bk
4-W
jumper 2 & 5

TRC-28, TRC-44, TRC-66, TRC-88, TRC-99, TRC-100, TRC-12, TRC-44B, TRC-14,
The above radios are Walkie Talkie and we do not recommend using amplified mics.

TRC-18, TRC-X20, TRC-X23, TRC-X20A
Code (R)
1-S
2-W
3-Bk
4-R

TRC-24
Code (R)
1-W
2-R&S
3-Bk
Sw.K required
Insert 10K ohm resistor in series with the white lead for desk mics.

Americana 23+
Code (R)
1-Bk
2-W
Sh-R&S
May require modification of mobile mics to short white lead during receive. See page 8.

TRC-23B, TRC-40
Code (R)
1-W
2-R&S
3-Bk
4, 5-N/C
Requires 22K ohm resistor in series with white lead for desk mics.

TRC-29
Code (R)

1-W		1-W
2-S&R		2-S
3-Bk	or	3-R
4, 5-N/C		4-N/C
		5-Bk

TRC-5
Code (E)
Wire color for color

TRC-50B/Mini 23B
Code (E)
Wired-in microphone. Wire color for color except reverse R and Bk.

TRC-10
Code (S)
1-S&R
2-Y
3-Bu
4-W
5-Bk

REGENCY

CB501
Code (E)
1-N/C
2-S
3-Bk
4-W
5-R

CR240, CR430, CR485, CR486
Code (E)
1-W
2-S
3-R
4-Bk

Imperial II, Romper, Range Gain, Range Gain II, Range Gain Double Sideband
Code (R)
1-W
2-R
3-Bk
4-S

Ranger CB-270
Code (R)
Tur ..... Original Mic Color/Part
W ..... relay contacts
Bk ..... relay coil
R&S ..... line
Caution: Avoid contact between any metal mic cases and radio chassis.

CB-283, 500
Consult factory for mic modification information. After modification, connect as original mic.

CB-27, CB-27-6/12
Code (R)
Tur ..... Original Mic Color/Part
W ..... thru 10K resistor to Pin #7 of 6BE6
R&S ..... chassis Gnd
Bk ..... relay coil

Formula 23, Sprint 23
Code (R)
1-W
2-S
3-Bk
4-R
Insert 10K ohm resistor in series with the white lead of desk mics. In some cases 1 & 2 may be reversed.

GT-523
Code (E)
Wire color for color except Bk wire and S must be reversed.

Spring Model 23 II, CR-185, CR-142, CR-230
Code (E)
1-W
2-S
3-Bk
4-R
Some models must have red and black reversed.

CR-123B
Code (R)

1-W		1-Bk
2-R&S	or	2-W
3-Bk		3-R&S

CR-186, CR-202
Code (E)

Tur	Original Mic Color/Part
W	R
Bk	Bk
R	purple
S	S

BTL-301, 304
Code (R)
1-S&Bk
2-R
3-N/C
4-W

HR-2MS, CR-123
Code (R)
Tp-W
Rg-Bk
Sh-R&S

ROBERTS

RCB10, RCB50
Code (R)
1-S&R
2-W
3-N/C
4-Bk

RCB70
Code (E)
1-W
2-N/C
3-N/C
4-R
5-Bk
6-S

RCB470A
Code (S)
1-W
2-N/C
3-Bu
4-S
5-Bk
6-R
Y not used

ROBYN

WV123A
Code (S)
1-Y
2-Bu&S
3-R
4-W
5-N/C
Bk not used

BB123, TR123C, GT7C, TR123B (4 pin)
Code (R)

1-W	1-W	1-W
2-R&S or	2-Bk or	2-Bk
3-N/C	3-S	3-R
4-Bk	4-R	4-S

Last two wiring listings are for 123B only.

TR123B (6-pin), TR123
Code (R)
1-W
2-Bk
5-R&S
2, 3, 6-N/C
Sw.K required for TR123B

J123
Code (R)

Tur	Orig. mic color/part
R&S	Circuit Gnd
W	PA switch & volume
Bk	Relay coil

SS747B
Code (R)
1-W
2-Bk
3-N/C
4-R&S

XL1, XL2, SX101, SX102B, SX102D, GT7, GT7B, K123, T123
Code (R)
1-W
2-S
3-Bk
4-R

LB23, LB23A, SX007, WV23, WV23A, DG30
Code (E)
1-W
2-S
3-Bk
4-R
Sw.K required

T123, Range Gainer
Code (R)
1-S
2-W
3-Bk
4-R

ROMAR

CB-7000
Code (E)
1-W
2-Bk
3-S
4-R

ACT-1914
Code (E)
1-W
2-S
3-R
4-Bk

ROSS

CB-1000
Code (E)

W-R82		1-W
R-Speaker	or	2-S
Bk-R76		3-Bk
S-R79		4-R

ROYAL

M-336
Code (S)
W to R63 and C54
R&S to Gnd
Y to T2
Bu to D12
Bk to C12, C19

ROYCE

1-614

Code (E)		Code (R)
1-W		1-Bk
2-S	or	2-N/C
3-Bk		3-R&S
4-R		4-N/C
		5-W
		6-N/C

Sw.K required

1-600, 1-600A, 1-600B, 1-620, 1-621, 1-612, 1-653B, 1-650, 1-648
Code (E)
1-W
2-S
3-Bk
4-R
1-612 requires Sw.K

1-601, 1-602, 1-602A, 1-603, 1-605A, 1-606, 1-610, 1-624, 1-625, 1-632, 1-635, 1-636, 1-640, 1-641, 1-655, 1-658, 1-660, 1-662, 1-675, 1-678, 1-682, 1-700, some 1-630 and 1-631
Code (R)
1-W
2-S&R
3-Bk
4-N/C
1-655, 1-658 and 1-675 require Sw.K
Insert 4.7K ohm resistor in series with white lead in desk mics.

1-605, some 1-602
Code (R)
1-W
2-S
3-Bk
4-R

1-630
Code (R)
1-W
2-R&S
3-N/C
4-N/C
5-Bk
6-N/C

1-631, 1-580
Code (R)
1-W
2-R&S
3-Bk
4-N/C
5-N/C
6-N/C

1-590A
Wired-in
Color for color except reverse R and Bk.
Code (E)

Tur	Roy
W	W
S	S
R	Bk
Bk	R

RYSTAL

CBR1700, CBR1800
Code (E)
1-W
2-S
3-R
4-Bk

CBR2100
Code (E)
1-S
2-W
3-Bk
4-R

SAMN ELECTRONICS CORP.

Orbitsonic 200
Code (E)
1-S
2-W
3-Bk
4-R

SANYO

TA901B
Code (E)
1-S
2-W
3-R
4-Bk
5-N/C

TA901C, TA1000, TA4000
Code (E)
1-Bk
2-W
3-S
4-R

TA923
Code (E)
1-S
2-N/C
3-Bk
4-W
5-R

S B E INC. (Linear Systems)

SBE49CB (Brute 40)
Code (E)
1-R
2-S
3-N/C
4-W
5-Bk

SBE34 (Brute)
Code (S)
W to R63 & C54
R&S to Gnd
Y-T2
Bu-D12
Bk-C12, C19

SBE ICB (Coronado, Wired-in Mic)
Code (R)
W-pin 11 of K1
Bk-pin 13 of K1
R&S-Gnd of chassis

SBE6, SBE7 (Sierra), SBE8 (Console), SBE10 (Coronado II), SBE11 (Trinidad), SBE21CB, SBE12 (Side Bander II), SBE14 (Super Console), SBE16 (Console II), SBE18 (Side Bander III), SBE21 (Cortez), SBE26 (Formula D), SBE29 (Catalina III), SBE30 (Trinidad II), SBE45 (Trinidad III), SBE42 (Cortez 40), SBE41 (Aspen), SBE44 (Malibu 40)
Code (R)
1-S
2-W
3-Bk
4-R

SBE22CB (Catalina II)
Code (S)
Tur ..... Original mic color/part
S ..... S
W ..... W
Y ..... Bu
Bk ..... Brown
R ..... R
Bu ..... Bk

SBE9 (CB Catalina)
Code (R)
Has wired-in mic. Wire color for color

Capri II (wired in)
Code (S)
W to R61, C45
S to Gnd
Y to T8
R to R37, C46 etc.
Bk to D8
Bu to R35, R40 etc.

Tempus 25
Code (E)
1-S
2-W
3-Bk
4-R

SCOUT

S110
Code (E) or (R)
1-W
2-Bk
3-R
4-S

SEARS

9343670500, 93436740500, 36710500, 36741600, 36742600, 36760600, 36712600, 38060700, CM23785A, CM6000LB, CM6000LA, CM6100S, CM6200S, CM4700S, CM6000LC, CM2358S
Code (E)
1-S
2-N/C
3-Bk
4-W
5-R

93436711600
Code (E)
1-N/C
2-S
3-R
4-W
5-Bk

2862676, 280626730
Code (R)
1-W
2-N/C
3-Bk
4-N/C
5-R
6-S
7-N/C

93436770500, 36771500, 36772600 (SSB)
Code (R)

1-Bk		1-R&S
2-N/C		2-N/C
3-W	or	3-Bk
4-S&R		4-W
5-N/C		5-N/C

SEIKI

HA23C
Code (R)

1-W		1-W
2-S&R		2-S&Bk
3-N/C	or	3-R
4-N/C		4-N/C
5-Bk		5-N/C

SHAKESPEARE

GBS240, 340, 1500, 2000, 2500
Code (E)
1-W
2-S
3-R
4-Bk
R & Bk may need to be reversed.

SHARK

CB55
Code (R)
1-S&R
2-W
3-N/C
4-Bk

C300X, CX300S
Code (E)
1-S
2-N/C
3-Bk
4-W
5-R

SHARP

CB500, CB500A, CB500UB
Code (R)
W-Y or brown
S&R-S&R or Bk
Bk-purple

CB750, CB750A, CB800, CB2260, CB2460
Code (E)
1-W
2-Bk
3-R
4-S

CBT55
Code (R)
1-W
2&3-R&S
4-Bk
Insert a 4.7K ohm resistor in series with the mic white lead of desk mics.

SHIGMA

SR76
Code (E)
1-W
2-S
3-R
4-N/C
5-Bk

SILTRONIX

1011B, 1011C, 1011D
Code (E)
Rg-W
Tp-Bk
Se-R&S

SSB23, SSB23A, AM1 (Penguin), AM2 (Condor)
Code (R)
1-W
2-Bk
3-N/C
4-R&S

SKYFON

OM423
Code (R)
1-W
2-S&R
3-Bk
4-N/C

SOHMERIKAMA

288A
Code (R)
1-S
2-Bk
3-W
4-R

SOMMERKAMP

FT277E
Code (R)
1-R&S
2-W
3-Bk
4-N/C

SONAR

E, G, H, FS23, FS2340, FS3023
Code (R)
Rg-W
Tp-Bk
Se-R&S

J23
Code (R)
Tur ..... Orig. mic color/part
W ..... W
Bk ..... R
R&S ..... Bk&S

J23 (5-pin plug)
Code (E)
1-S
2-R
3-Bk
4-W
5-N/C

SONIC

CT101, 105, 121
Code (E)

Tur	Son		
W	Y		1-S
Bk.....	W	or	2-Bk
R	Bk		3-R
S	S		4-W

SONICO

CTI90
Code (E)

Tur	Soni
W	Y
R	Y-Green
S	S
Bk	orange

SONY

ICB2500
Code (R)
1-S&R
2-Bk
3-N/C
4-W

SPARKOMATIC

CB1023
Code (E)
1-W
2-S
3-Bk
4-N/C
5-R
Sw.K required

CB1123
Code (E)
1-S
2-W
3-Bk
4-R

CB2023
Code (E)
1-W
2-S
3-Bk
4-R

CB2123
Code (S)
1-W
2-Bu
3-Bk
4-S
5-R
Y-not used

SQUIRE-SANDERS

23'er
Code (R)
Tp-Bk
Rg-W
Se-R&S

STANDARD COMMUNICATIONS

Horizon 29
Code (E)
1-S
2-W
3-Bk
4-R

Horizon 29A
Code (E)
1-R
2-W
3-Bk
4-S

SUPERSCOPE

Aircommand CB140, CB340, CB640
Code (E)
1-N/C
2-S
3-Bk
4-R
5-W

SURVEYOR

2400
Code (E)

Tur	Sur.
R	Purple
Bk	R
W	Y
S	S

2300, 2400, 2400A, 2400B
Code (R)
1-Bk
2-S&R
3-N/C
4-W

2400

Code (R)		Code (E)
1-W		1-W
2-S		2-S
3-R	or	3-Bk
4-N/C		4-N/C
5-Bk		5-R

2600
Code (E)
1-R
2-Bk
3-W
4-S

2610, 2630
Code (E)
1-S
2-W
3-Bk
4-R

SWAN

1210A
Code (R)
1-W
2-Bk
3-R
4-S

300B
Code (R)
Rg-W
Tp-Bk
Se-R&S

TAKASAGO ELECTRONIC INDUSTRIES

Highway 703CBR
Consult factory

TEABERRY

Plugs on some Teaberry radios must be fully assembled to be operational.

5X5, Big T
Code (E)
1-W
2-S
3-R
4-Bk
Big T requires Sw.K

5X5 (Silver Face)
Code (R)
1-W
2-R&S
3-Bk
Insert ¼ watt 22K ohm resistor in series with white lead for desk mics.

Big T, Stalker I, Stalker II
Code (R)
1-W
2-S
3-R
4-Bk
Sw.K required
Insert 4.7K ohm resistor in series with white lead for desk mics.

TB73, Titan T, T Bear, T Charlie, T Command, T Dispatch
Code (E)
1-W
2-S
3-R
4-Bk

Mighty T
Code (E)
1-S
2-N/C
3-Bk
4-W
5-R
Plug must be fully assembled.

Racer T, T-Control, T Hawk
Code (E)
1-R
2-W
3-Bk
4-S

Model T, T123B
Code (R)
1-W
2-Bk
3-R
4-S
R&S may need to be reversed

Ship's Radio
Code (R)
1-W
2-Bk
3-S
4-R

Tele-T
Code (E)
1-S
2-N/C
3-R
4-W
5-Bk
6-N/C

Mini-T
Code (S)
Consult factory

T-Charlie I
Code (E)

1-R		1-Bk
2-W	or	2-W
3-Bk		3-S
4-S		4-R

Twin T
Code (R)
Rg-W
Tp-Bk
Se-R&S

T-Scout
Code (E)

Tur	Tea		1-W
W	Y	or	2-S
Bk.....	R		3-R
S	S		4-Bk
R	Violet		

TELEDYNE

RA510
Code (R)
1-W
2-R&S
3-Bk

TEMPO

ONE
Code (R)
Tp-Bk
Rg-W
Se-S&R

TENKO
M80
Code (R)
Rg-Bk
Tp-W
Se-S&R

TOKAI
TC5040
Code (S)
1-W
2-Y
3-Bk
4-R
5-Bu
6-S

TOKYO-SANSEI
Grand-Prix, D1325RF, 1125
Code (E)
1-W
2-S
3-R
4-Bk

TOYOTA MOTOR SALES
00860-00020, 00860-0001
Code (E)
1-W
2-Bk
3-S&R
4-N/C
5-N/C
R may need to be on pin 5

TRADESCOPE
2001
Code (R)
1-R
2-Bk&S
3-N/C
4-W
5-N/C
6-N/C

TRAM
TR27D, TR27E, TR70C, XL100, Corsair, 464
Code (R)
Tp-Bk
Rg-W
Se-R&S

Titan, Titan II, Titan IIA, Titan III, Titan IV, D201
Code (R)
1-W
2-S
3-R
4-Bk

Diamond 40, Diamond 60, XL, XL5
Code (R)
1-S
2-W
3-Bk
4-R

Diamond 60 and Diamond 4u require 4.7K ohm resistor in series with the white lead in desk mics.
Newer models XL5 and Diamond 40 may be Code (E).

TRANSPHONIC
CB418
Code (E)
1-S
2-W
3-R
4-Bk
5-N/C

TRANSONIC
MCB22, MCB40, MCB41
Code (E)
1-W
2-S
3-Bk
4-R

MCB24
Code (E)
1-W
2-S
3-R
4-Bk

TRUETONE
MIC4434A67 (with noise blanker)
Code (E)
1-W
2-S
3-R
4-Bk
May require a 33K ohm resistor in series with white lead

MIC4434A67 (without noise blanker)
Code (E)
1-W
2-S
3-Bk
4-R

MCC4434A57
Code (E)
1-W
2-Bk
3-R
4-S

UNIDEN CORP.
CBR9300
Code (R)
1-N/C
2-Bk
3-W
4-S&R

UNIMETRICS
Porpoise I
Code (E)
W to C34
S to Chassis Gnd
R to Br
Bk to Bt

Porpoise I, Mako I, Marlin I
Code (S)
Tur ..... Uni board No.
Bu 2
R 1
Bk 3
W 4
Y ..... N/C
S ..... Gnd

Stingray I
Code (R)
Middle terminal-W
Bottom terminal-Bk
Top two-R&S

Stingray II
Code (R)
1-W
2-R
3-S
4-N/C
5-Bk

Sandpiper 25, Sandpiper 25DX
Code (E)
1-R
2-W
3-S
4-Bk

Seahorse I
Code (S)
Bu-T2
Bk-R3
W-M4
S-G
R-B1
Y not used

UNION
UTR1000
Code (E)
1-W
2-S
3-R
4-Bk

UNIVERSE
747

Code (R)		1-S
W to B1	or	2-W
Bk to relay		3-R
R&S to Gnd		4-Bk

U S L
Contact 23
Code (E)
1-Bk
2-W
3-R
4-S
Sw.K required

UTAC
TR20
Code (R)
Rg-W
Tp-Bk
Se-R&S

18M, TRX30
Code (R)
1-W
2-R&S
3-Bk

Micro Mini 3, Micro Mini 6, Micro Mini 23, Super Tiny 23
Code (S)

1-W		1-W
2-Y		2-Bk
3-Bk		3-Bu
4-R	or	4-Y
5-Bu		5-R
6-S		6-S

Studio 4000
Code (R)
1-W
2-Bk
3-S&R
4-N/C

TRX2000
Code (R)
1-Bk
2-S&R
3-W
4-N/C
5-N/C

VANCO
Stallion 1000
Code (R)
1-W
2-Bk&S
3-R
4-N/C
5-N/C

VECTOR
III, VI, IX
Code (R)
1-W
2-S&R
3-N/C
4-Bk

VII
Code (E)
1-W
2-S
3-R
4-Bk

WELLS INC.
W605
Code (R)
1-W
2-S&R
3-Bk
4-N/C
5-N/C

W705
Code (E)
1-S
2-W
3-Bk
4-R

WESTERN AUTO

23-4434-9, CYJ4834A-87, CYJ4832A-87
Code (E)
1-W
2-S
3-R
4-Bk

CYJ4837A-87
Code (E)
1-W
2-N/C
3-R
4-S
5-N/C
6-Bk

WESTLAND INTERNATIONAL

Westport 9000
Code (E)
1-W
2-S
3-R
4-Bk

WILSON

60
Code (E)
1-W
2-S
3-R
4-Bk

WINDSOR

W60, W80, MCB22
Code (E)
1-W
2-S
3-R
4-Bk

1008
Code (R)
1-W
2-S
3-R
4-N/C
5-Bk

3000
Code (E)
1-S
2-W
3-R
4-Bk
5-N/C

X-TAL

XCB7
Code (E)
1-W
2-N/C
3-N/C
4-R
5-Bk
6-S

XCB70
Code (S)
1-W
2-N/C
3-S
4-Bu
5-R
6-Bk

XCB71
Code (S)
1-W
2-N/C
3-Bu
4-S
5-Bk
6-R

XCB6, CB3, Granada
Code (E)
1-S
2-W
3-R
4-Bk

CB5, XCB11
Code (R)
1-S&R
2-W
3-N/C
4-Bk

CB7
Code (E)
1-W
2-N/C
3-Bk
4-N/C
5-R
6-S

XSSB10
Code (R)
1-Bk
2-N/C
3-N/C
4-N/C
5-W
6-R&S

YAESU

F1101, FT109B, FT401B
Code (R)
Tp-Bk
Rg-W
Se-R&S

FT101, FT101B, FT101EE, FT101EX
Code (R)
1-R&S
2-W
3-Bk
4-N/C

ZENIER

77
Code (E)
1-W
2-S
3-R
4-Bk

ZODIAC

M5023
Code (E)

1-S		1-W
2-N/C		2-S
3-Bk	or	3-Bk
4-W		4-N/C
5-R		5-R

M5026
Code (R)
1-W
2-R&S
3-Bk
4-N/C
5-N/C

In parting, we at Telex hope your microphone and radio are working well together and that you are enjoying the benefit of each. It should be pointed out that information in this booklet is as accurate as the information we have received.

We would like to thank all the concerned individuals, agencies and companies who have contributed information to make this booklet possible.

Thank you,
Customer Relations Department

RETURNING MICS TO FACTORY FOR REPAIR

Should it become necessary to return your microphone to the factory, please use the following form and return via insured mail or UPS to:

Turner Division of
Telex Communications, Inc.
ATTN: CB Customer Service
1720 E. 14th St.
Glencoe, MN 55336

Your Name _____

Your Address _____
Street

_____
City State Zip

Your Telephone _____

Date _____

Type of Microphone _____

Length of Time Owned _____

Radio Mfg. Name _____

Model Number _____

How used (ie: car, boat, truck, etc.) _____

_____

Specific Problem _____

_____

On chargeable repair orders, microphones will be returned COD, UPS, unless otherwise specifically requested. Customers requesting shipment by "fastest way" will be charged for that service.

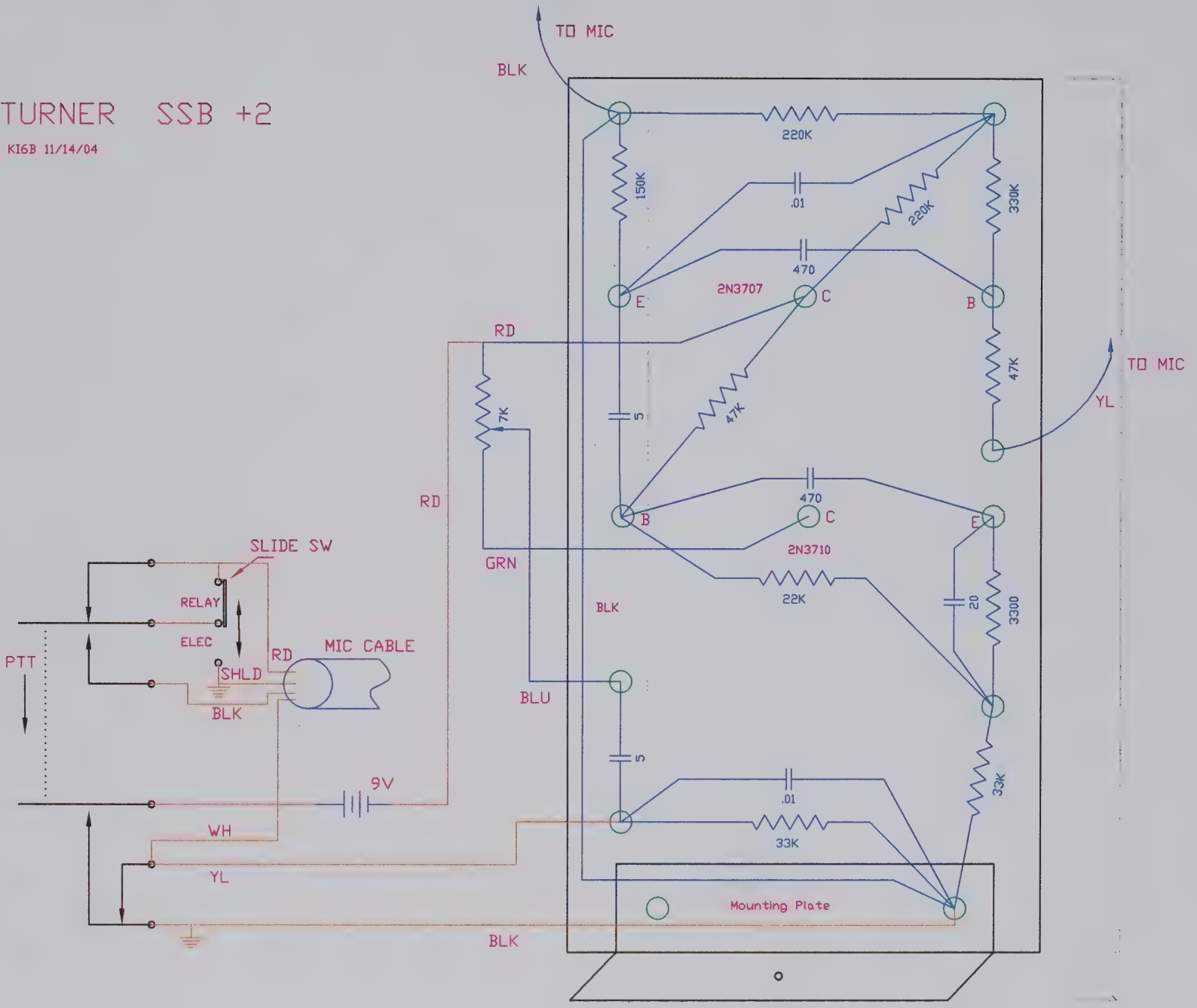
TELEX TURNER

TELEX COMMUNICATIONS, INC.

PN 02695

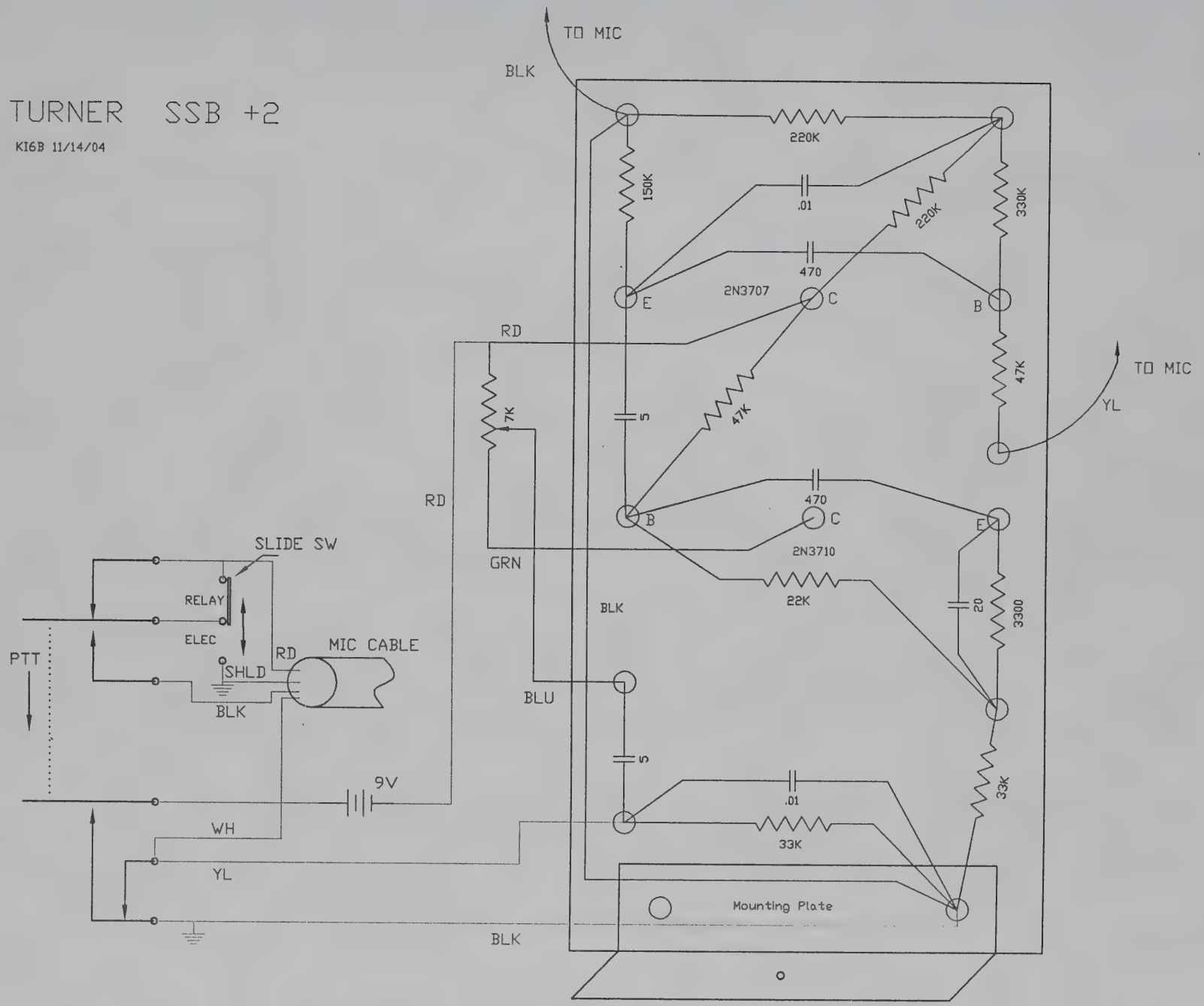
TURNER SSB +2

KI6B 11/14/04



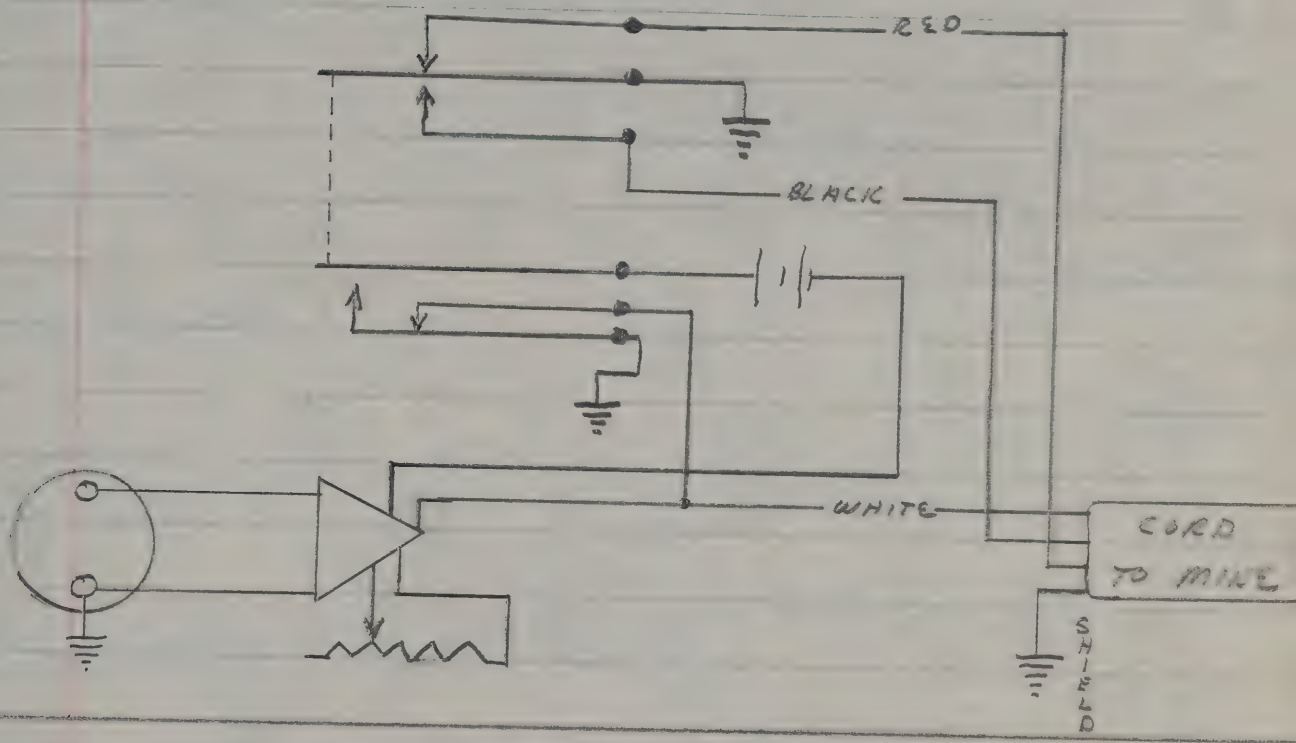
TURNER SSB +2

KI6B 11/14/04



TURNER +2 SCHMATIC

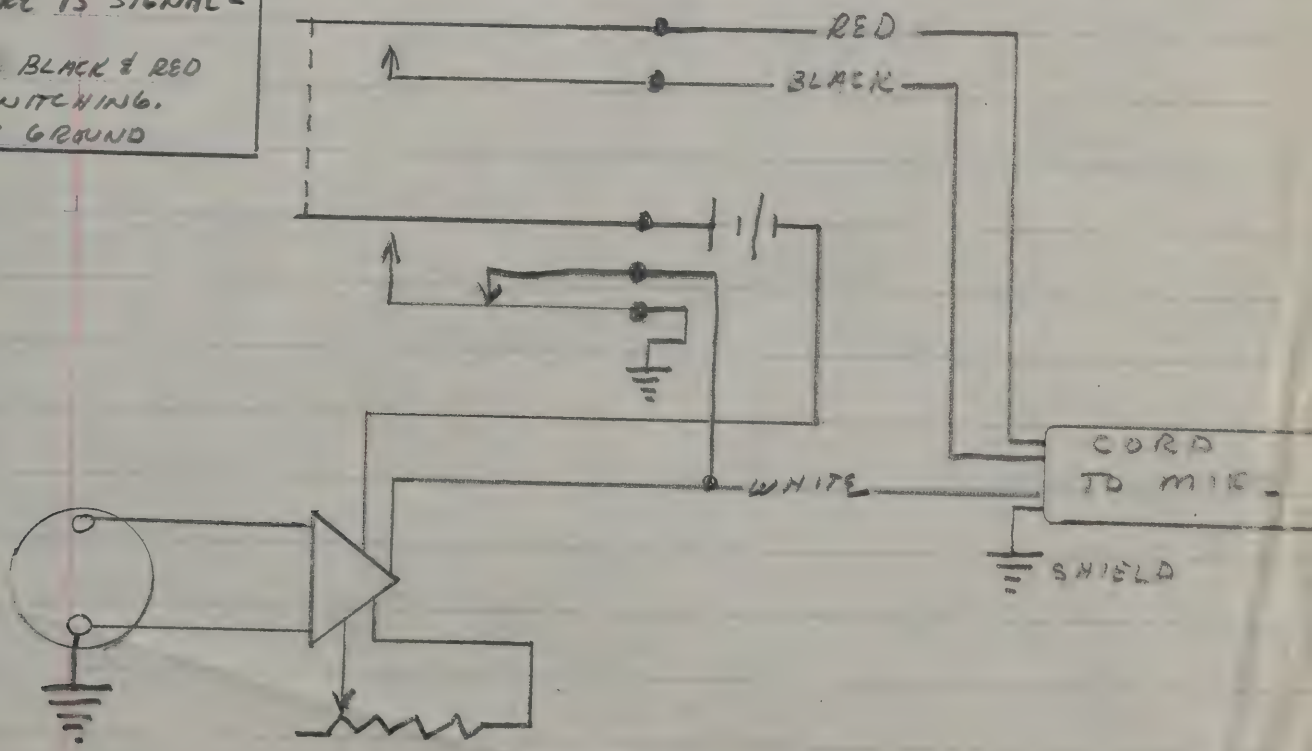
ELECTRONIC SWITCHING



RELAY SWITCHING

NOTE:

WHITE WIRE IS SIGNAL - HOT LEAD. BLACK & RED WIRES - SWITCHING. SHIELD IS GROUND



Turner M+2U

transistorized mobile microphone

The M+2U was designed to fill the need of a mobile microphone with high modulation level capability. It is for use with all types of communication transmitters and transceivers, particularly business radio and CB.

The M+2U can be easily adapted to almost any transmitter. The white wire is the signal ("hot") lead and the shield provides a ground connection between microphone and transmitter case/ground. The black and red leads provide the necessary control switching as shown in Figures 2 and 3. When replacing another microphone with the M+2U, consult the equipment manual for proper wiring of the connector (if connector is used). If an equipment manual is not available, then care should be taken to analyze the microphone being replaced to determine connector connections and type of switching needed. Experience indicates that most difficulties in replacing a microphone occur as a result of poor workmanship in making up the connector. Avoid excessive heat which can damage insulation and keep exposed leads short to prevent shorting within the connector.

In case of difficulty, please do not tamper with the microphone as this will void the factory warranty. Contact factory for further instructions.

A Loss in Modulation Level Means a Loss in Effective Communications Range of Your Equipment.

Many transceivers do not have sufficient amplification or adjustment of modulator amplification to be used conveniently. The M+2U is designed to be used at 8". The volume/gain control on the M+2U should be set at 6 initially. Remember that this is a starting point and your modulation level should be verified on a monitor scope. Insufficient modulation will cut your effective range and limit your ability to overcome local QRM conditions. Over modulation may cause excessive distortion on the air and limit the intelligibility of your signal. The conveniently located volume control easily allows a different setting for each individual using the microphone. The wide range in output level allows you to compensate any voice at any reasonable position from the M+2U.

The M+2U or JM+2U will replace all conventional domestic and imported crystal, ceramic and Hi Impedance Dynamic microphones. It is the most universal microphone available today.

FIGURE 2

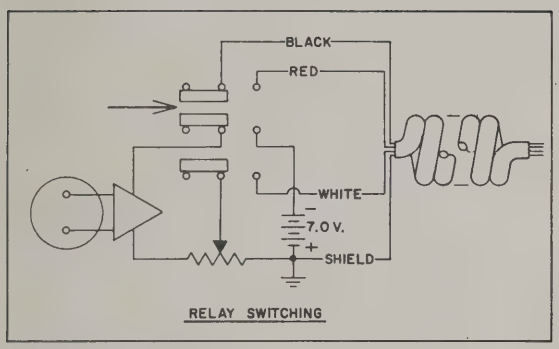
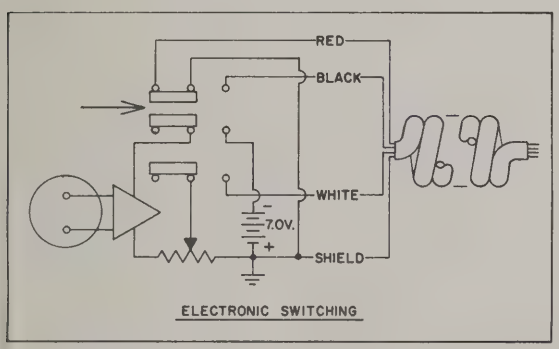


FIGURE 3



BATTERY REPLACEMENT:

To replace the battery in the M+2U and JM+2, proceed as follows: Place the microphone face down on a clean surface. To prevent scratches to the front, it may be placed on a bench cloth. Carefully remove the four screws holding the back on, while holding the microphone back in place. Now slowly remove the back of the microphone case making sure the circuit board with volume control remains in the front section of the microphone case. Place the rear of the case beside the front of the case. Hold the circuit board down in the front case while you pull the battery from the battery holder. Insert a new Mallory TR-175 battery or equivalent. Be sure to observe polarity when installing the new battery. Carefully reverse the disassembly steps, making sure the cable wires loop around the battery when you replace the back. These instructions should be followed carefully to prevent damage to the circuit board and microphone interior. If the TR-175 battery is not available in your area, please order directly from the Turner Co. Please send your check, or money order for $1.60 for each battery required and we will ship by return mail.

TURNER

the TURNER company

Cedar Rapids, Iowa U.S.A.

Turner
M+2U
JM+2U

transistorized mobile microphone

Turner M+2U specifications

FIGURE 1
MODEL M+2U MICROPHONE

GENERAL:

The new greatly improved M+2U, a modified version of the original M+2, has been designed specifically for the CB, Business Radio and Communications field. The M+2U utilizes a two stage transistorized amplifier providing a gain of 15db over conventional ceramic mobile microphones. The M+2U with its high output level, has the capability of fully modulating any transmitter. The ceramic generating element of the M+2U is unaffected by temperature or humidity extremes. The amplifier uses rugged silicon transistors for maximum temperature stability.

The M+2U uses a cycolac case which is very rugged and will provide years of service under normal handling conditions.

The output level of the M+2U is easily adjusted by a calibrated, semi-recessed volume control located at the top rear side of the microphone.

The M+2U is wired for relay switching (closing an external set of contacts—no connection to ground). The JM+2U is wired for "electronic switching." (The most common type of electronic switching is a switching of two wires to ground).

The additional switching contacts provided by the three pole double throw switch in the new M+2U and JM+2U give them greater switching flexibility and allow for compatibility with virtually all transceivers, either tube type or transistorized, except those which require a carbon microphone.

SPECIFICATIONS:

Element type: Ceramic

Output Level: -40 db below 1 volt per dyne per cm² into a 1 megohm load.

Amplifier Voltage Gain: 0 to 15 db

Temperature Range: -30°C to 65°C

Frequency Response: 300-3000 c.p.s.

Battery: Mallory TR-175 7 volt mercury type (or equal). Battery is included.

Battery Life: Approximately six months, based on usage.

Cord: 3 conductor (1 shielded) 11" retracted, 5' extended PVC coil cord.

GUARANTEE:

All Turner microphones are individually and thoroughly tested before leaving the factory and are guaranteed against defective materials and workmanship for one year, providing that instructions are fully complied with and that units are not opened or tampered with in any way.

TURNER

the TURNER company
Cedar Rapids, Iowa U.S.A.

the TURNER co.
Cedar Rapids, Iowa

model 250 Series microphone specifications

turner 250 series

specifications

Figure 1
Model 250 Microphone

GENERAL:

The 250 series is headlined by models 250, 251, and 256 the three models in the series with exclusive new triple switching action. A touch bar on-off switch with a locking lever for convenience in extended "talks" and an auto-lift switch in the base of the microphone. Lift it up, it's on — set it down, it's off. Plus a switch in the base to disable the Auto-lift switch if that feature is not to be used in a particular application.

All models in the series feature single unit die cast construction. One piece only. No accessories needed.

Excellent for use as police dispatcher, control tower, taxi Dispatch, or paging in restaurants, bowling alleys and other communications fields, the model 250, (hi impedance dynamic) and 251 (low impedance) dynamic are rugged yet sensitive units. Both feature Turner's "Dynaflex" plastic diaphrams which are capable of withstanding extremes of both temperature and humidity.

Models 252, 253, 254 and 255 complete the series. Models 252 (hi impedance, dynamic) and 253 (low impedance) have a painted gray hammertone finish, and are without the auto-lift switch, and have 7' cable.

Models 254 and 255 are crystal microphones with gray hammertone finish and 7' cable. Model 254 has a touch bar on-off switch with lever locking feature. Model 255 is without switches. Models 254, 255 and 256 are excellent for amateur communications of all type.

The hi impedance dynamic models, 250, and 252 should be used with an amplifier having a high impedance input of 100,-000 ohms or more. The 150 ohm models, 251, and 253 should be used with an amplifier having an input of from 50 to 250 ohms.

Care should be taken when installing microphones to see that the cables do not run parallel to A.C. power lines for long distances as hum may be induced into the microphone circuit.

The crystal microphones in the series, models 254, 255 and 256 should be used with an amplifier having an input resistance of 1 meg ohm or more. Additional cable may be added without changing the frequency response, however, the addition of 20' of low capacity cable will result in a loss in output level. Avoid any use which might subject the microphone to excessive heat as this will permanently damage the microphone interior.

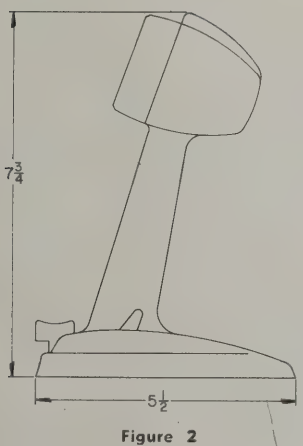


Figure 2

SPECIFICATIONS:

	250	251	252	253	254	255	256
TYPE	Dynamic	Dynamic	Dynamic	Dynamic	Crystal	Crystal	Crystal
IMPEDANCE	Hi	150	Hi	150	Hi	Hi	Hi
RESPONSE	60-10,000 c.p.s.				60-8,000 c.p.s		
OUTPUT LEVEL (RE: 1 VOLT PER MICRO-BAR)	—52	—52	—52	—52	—48	—48	—50
CABLE	Per Hi Z 20'	20'	7'	7'	Per Hi Z 7'	7'	20'
CASE	(All Models) Die Cast Zinc Alloy						
FINISH	Chrome	Chrome	Painted	Painted	Painted	Painted	Chrome
DIMENSIONS	(All) See Figure 2						
WEIGHT	3 lbs.	3 lbs.	3 lbs.	3 lbs.	2½ lbs.	2½ lbs.	2½ lbs.
POLAR PATTERN	(All) Omni Directional						
SWITCHES AND WIRING, SEE FIG.	3	4	5	6	7	8	9

TURNER

the TURNER company
Cedar Rapids, Iowa, U. S. A.

CANADIAN MARCONI COMPANY, Toronto, Ontario, AD. AURIEMA, INC., 89 Broad Street, New York 4, New York, U.S.A.

turner 250 Series

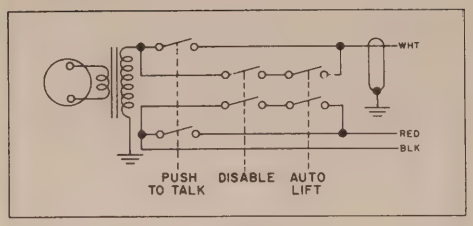


Figure 3

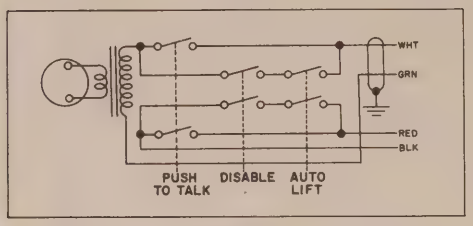


Figure 4

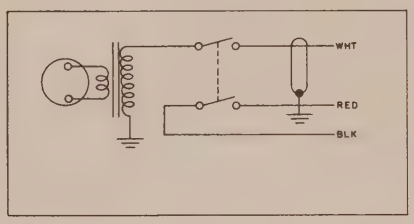


Figure 5

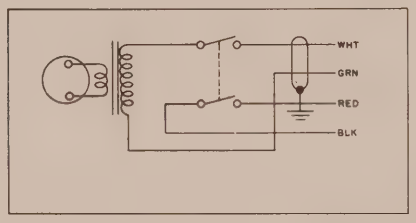


Figure 6

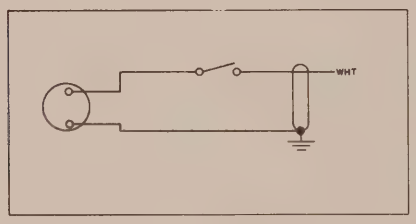


Figure 7

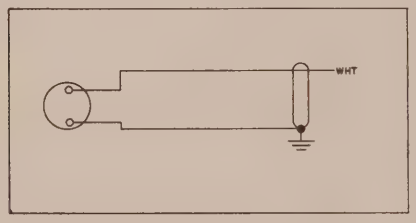


Figure 8

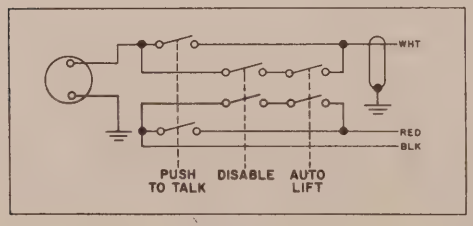


Figure 9

TURNER model 250 Series microphone specification

RELAY OPERATION:

Models 250, 251, 252, 253 and 256 come with either three conductor (one shielded) or four conductor (two shielded) cable to allow the installer to wire for external relay operation. See figures 3 through 9.

CAUTION:

The amplifier chassis and other associated equipment should be connected to an earthen ground to avoid shock hazard during operation of the system.

ARCHITECT-ENGINEERS SPECIFICATIONS:

The microphone shall be a pressure operated dynamic, Turner Model 250 (251*) or equivalent. Frequency response shall be uniform from 60-10,000 c.p.s (60-13,000 c.p.s.) and shall be substantially independent of direction to the source of sound. Sensitivity shall be —52 db at hi impedance (ref. 1 volt per dyne cm^2) and RETMA (GM) —146 db at 150 ohms.

The case shall be of one piece die cast zinc alloy with satin chrome finish. Dimensions shall be 5½" deep x 7¾" high x 3¾" wide. The diaphragm shall be of "dynaflex" plastic, having high impact strength and shall be independent of the effects of temperature and humidity. Microphone impedance shall be 25,000 ohms (150 ohms). Cable shall be black three conductor (one shielded) four conductor (two shielded) 20 ft. in length. The microphone shall be wired for relay operation. The microphone shall have the following switching arrangements: (1) Touch front bar to talk; (2) lift switch in base (3) on-off lever lock switch on the side of the microphone base and a switch to disable the lift switch in the base (underside). The weight of the microphone shall be three pounds including cable.

*When specifying model 251, substitute the values in parenthesis.

GUARANTEE:

All Turner microphones are individually and thoroughly tested before leaving the factory and are guaranteed against defective materials and workmanship for one year, providing that instructions are fully complied with and that units are not opened or tampered with in any way.

the TURNER company
Cedar Rapids, Iowa, U. S. A.

Printed in U.S

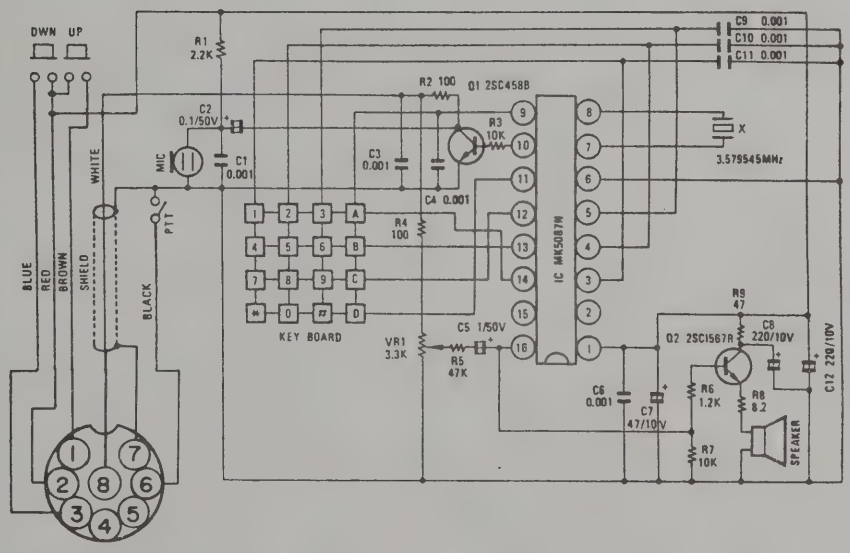
YAESU

CONDENSER MICROPHONE
YM-48

INSTALLATION

The **YM-48** is designed for use with the **FT-680R, FT-480R, FT-780R**, and **FT-726R** and no connection modifications are required. For autopatch or control purposes, a two-tone encoder can be activated from the keyboard, with the built-in speaker monitoring the two-tone signal.

SCHEMATIC DIAGRAM



Q1	2SC693F	D1,2	1S1555
Q2	2SC458B	T	2.8K:600
Q3	2SC1567R	M	B70055E0
Q4	2SA794R	SP	C030K01A0000

YAESU MUSEN

Printed in Japan

FEATURES

- Attractive, modern design
- Rugged die-cast construction
- High output level
- Wide, uniform response

DESCRIPTION and APPLICATIONS

Unique, modern family of general purpose microphones, models 641, 638, and 634A constitute a fresh, new approach to microphone design. Advanced engineering and production techniques have resulted in a series of microphones exhibiting extended frequency response and high output level combined with attractive styling and extreme ruggedness, and all at very moderate cost. This combination of features makes these microphones ideal for public address, home recording, amateur and commercial communications, paging systems, and electronic teaching aids.

MODEL 641

Designed for conventional stand mounting, the 641 is durably constructed of die-cast zinc and high impact Cycolac. The fixed-tilt design places the microphone at the most convenient operating angle. A slide on-off switch and 16-foot cable are included. The striking two-tone styling enhances appearance in any application.

MODEL 634A

The Model 634A is similar in design and specifications to Model 641 (above) except it is furnished without fixed-tilt coupler or on-off switch. Standard female 5/8"-27 threads are provided for convenient attachment to standard boom or goosneck with complete concealment of cable. Designed for desk mounting in electronic teaching aids, communications, and paging systems where an integral switch is not required. Equipped with 6-foot cable.

MODEL 638

E-V Model 638, successor to the famed 605, continues the tradition of quality and extreme reliability in very compact form. The fixed-tilt design incorporated in the stand coupler places the microphone head at the most convenient operating position. Standard 5/8"-27 threads are provided for attachment to any microphone stand or boom.

SPECIFICATIONS

	641	638	634A
Generating Element:	moving coil dynamic	moving coil dynamic	moving coil dynamic
Frequency response:	70-10,000 cps	70-10,000 cps	70-10,000 cps
Polar Pattern:	omnidirectional	omnidirectional	omnidirectional
Impedance:	150 ohms or HI-Z (specify on order)	150 ohms or HI-Z (specify on order)	150 ohms or HI-Z (specify on order)
Output Level HI-Z:	-57 db (0 db = 1 volt/dyne/cm^2)	-57 db (0 db = 1 volt/dyne/cm^2)	-57 db (0 db = 1 volt/dyne/cm^2)
150 ohms:	-57 db (0 db = 1 mw/10 dyne/cm^2)	-57 db (0 db = 1 mw/10 dyne/cm^2)	-57 db (0 db = 1 mw/10 dyne/cm^2)
Diaphragm:	Electro-Voice Acoustalloy®	Electro-Voice Acoustalloy®	Electro-Voice Acoustalloy®
EIA sensitivity HI-Z:	-153 db	-153 db	-153 db
150 ohms:	-151 db	-151 db	-151 db
Case material:	chrome plated die-cast zinc and gray high impact Cycolac	chrome plated die-cast zinc	chrome plated die-cast zinc and gray high impact Cycolac
Dimensions:	See Fig. 1	See Fig. 1	See Fig. 1
Mounting:	5/8"-27 thread	5/8"-27 thread	5/8"-27 thread
Switch:	shorts microphone output in "off" position	none	none
Cable HI-Z:	16' single conductor shielded rubber jacketed	6' single conductor shielded rubber jacketed	6' single conductor shielded rubber jacketed
150 ohms:	16' two-conductor shielded rubber jacketed	6' two-conductor shielded rubber jacketed	6' two-conductor shielded rubber jacketed

Warranty: The Models 641, 638, and 634A are guaranteed against defects in original workmanship and materials.

ENGINEERING DATA 634A, 638 and 641 dynamic microphones

ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

MODEL 641

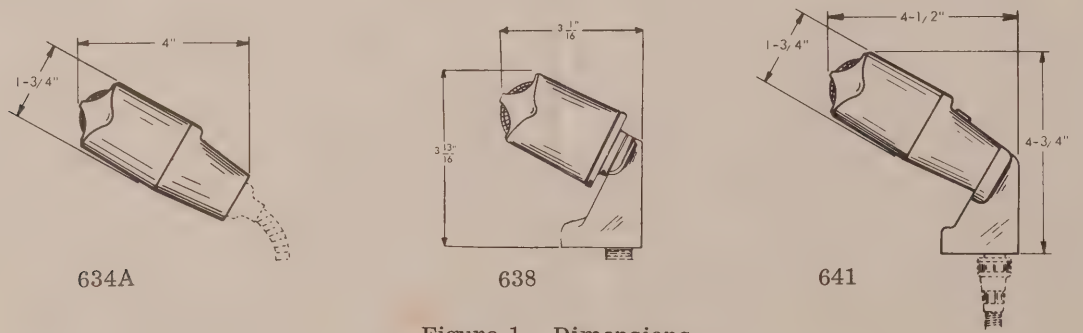
The microphone shall be an Electro-Voice model 641 or equivalent. The microphone shall be a pressure, dynamic type with uniform frequency response from 70 to 10,000 cps. The diaphragm shall be non-metallic Acoustalloy®. The microphone output shall be (specify 150 ohms or HI) impedance. Output level shall be -57 db with 0 db equalling (specify 1 volt/dyne/cm^2 at high impedance, or 1 mw/10 dynes/cm^2 at 150 ohms). EIA sensitivity rating shall be (specify -153 db at high impedance, or -151 db at 150 ohms). The microphone shall include a slide type on-off switch which shorts microphone output in "off" position. The case shall be of high pressure die-cast zinc with satin chrome finish and gray high impact Cycolac. A 16-foot single-conductor (two-conductor, if low impedance) shielded synthetic rubber jacketed cable shall be provided. The microphone shall have a cable connector similar or equivalent to Amphenol MC1M (if low impedance, MC2F). The microphone shall include a stand coupler with 5/8" -27 thread and the head shall be tilted at a fixed angle of 60 degrees from vertical.

MODEL 638

The microphone shall be an Electro-Voice model 638 or equivalent. The microphone shall be a pressure, dynamic type with uniform frequency response from 70 to 10,000 cps. The diaphragm shall be of non-metallic Acoustalloy®. The microphone output shall be (specify 150 ohms or HI) impedance. Output level shall be -57 db with 0 db equalling (specify 1 volt/dyne/cm^2 at high impedance, or 1 mw/10 dynes/cm^2 at 150 ohms). EIA sensitivity rating shall be (specify -153 db at high impedance, or -151 db at 150 ohms). The case shall be of high pressure die-cast zinc with satin chrome finish and gray high impact Cycolac. A 6-foot single conductor (two-conductor, if low impedance) shielded, synthetic rubber-jacketed cable shall be provided. The microphone shall have a cable connector similar or equivalent to Amphenol MC1M (if low impedance, MC2F). The microphone shall include a stand coupler with 5/8"-27 thread and the head shall be tilted at a fixed angle of 60 degrees from vertical.

MODEL 634A

The microphone shall be an Electro-Voice model 634A or equivalent. The microphone shall be a pressure, dynamic type with uniform frequency response from 70 to 10,000 cps. The diaphragm shall be of non-metallic Acoustalloy®. The microphone output shall be (specify 150 ohms or HI) impedance. Output level shall be -57 db with 0 db equalling (specify 1 volt/dyne/cm^2 at high impedance, or 1 mw/10 dynes/cm^2 at 150 ohms). EIA sensitivity rating shall be (specify -153 db at high impedance, or -151 db at 150 ohms). The case shall be of high pressure die-cast zinc with satin chrome finish and gray high impact Cycolac. A 6-foot single conductor (two-conductor, if low impedance) shielded, synthetic rubber-jacketed cable shall be provided. The microphone shall include 5/8" -27 mounting threads and shall permit complete concealment of cable when mounted.



634A 638 641

Figure 1 - Dimensions

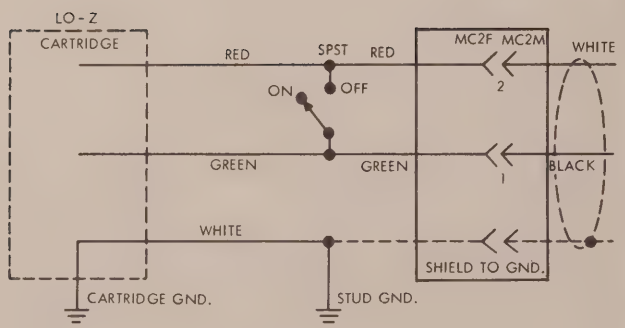


Figure 2A - Wiring diagram Model 641 lo-Z

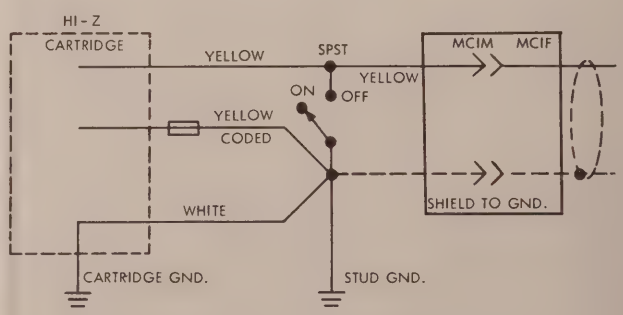


Figure 2B - Wiring diagram Model 641 hi-Z

Model 638 identical but less switch

Model 634A identical but less switch and connector

Jimmy Knight

601 268 5709

Turn + 2

ELECTRET CONDENSER MICROPHONE

ECM-41

OPERATING INSTRUCTIONS

Before using the ECM-41, please read this manual thoroughly.
This manual should be retained for future reference.

Sony Corporation
Printed in Japan
2-599-120-21 (1)

© 1978 by Sony Corporation

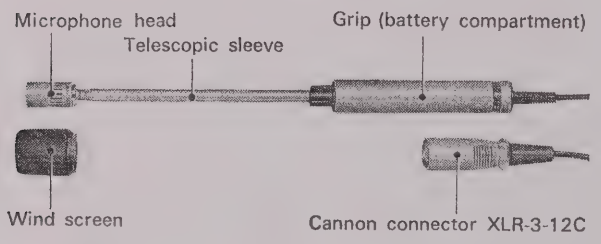
FEATURES

- Uni-directional characteristics
- Ideal design for interview use because of its compact size and adjustable sleeve
- Wind screen supplied
- With a Cannon connector equipped

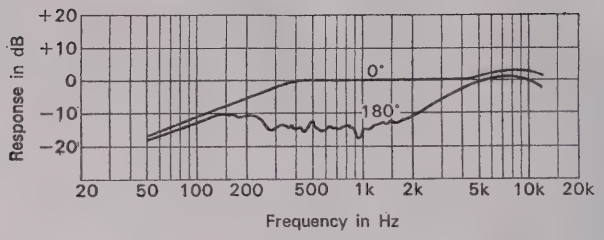
PRECAUTIONS

- The microphone should never be dropped or subjected to any excessive shock.
- Keep the microphone away from extremely high temperatures (above 60°C or 140°F).
- If the microphone is not to be used for a long time, remove the battery to avoid any possibility of corrosion.
- In case of battery leakage, wipe off any deposit in the battery compartment.
- If the microphone is placed too near the speakers, a howling effect (acoustic feedback) may occur. In this case, change the direction of the microphone until the howling stops, or decrease the speaker volume.
- Microphones and recording equipments should be turned on at least 30 minutes before they are actually used. This assures stable performance of the microphones and equipments.
- When you adjust the length of the microphone, lower the volume of the connected tape recorder or the amplifier in order to avoid the noise.

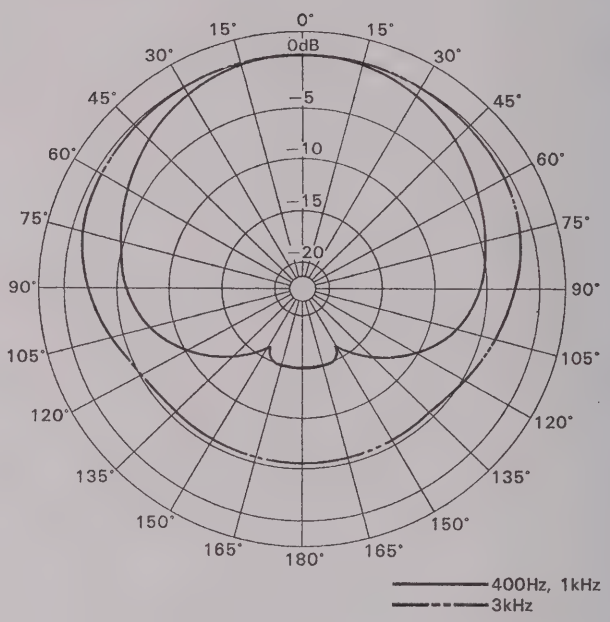
PARTS IDENTIFICATION



Frequency response



Directivity



Power requirements Normal operating voltage: 1.5 V DC
Minimum operating voltage: 1.1 V DC
Current drain: Less than 0.2 mA
Battery life: Approx. 7,000 hours with Sony SUM-3S, EVEREADY 1015 (manganese battery) or EVEREADY E91 (alkaline battery)

Noise level Signal-to-noise ratio:
More than 43 dB (1,000 Hz, 1 μbar)
Inherent noise: Less than 31 dB SPL
(0 dB = 2×10^{-4} μbar)
Wind noise *1 (with wind screen):
Less than 50 dB SPL
Induction noise from external magnetic field *2: Less than 5 dB SPL/mG

*1 Wind noise is the value measured by applying a wind velocity of 2 m/sec. (6.6 ft./sec.) from all directions to the microphone. The mean value is taken and converted to the equivalent input sound level.
0 dB = 2×10^{-4} μbar

*2 The external magnetic field induction noise is measured with the microphone placed in an alternating magnetic field of 50 Hz, 1 milligauss. The maximum noise value is taken and then converted to the equivalent input sound level. 0 dB = 2×10^{-4} μbar

Maximum sound pressure input level (at 1,000 Hz, 1% distortion) 126 dB SPL

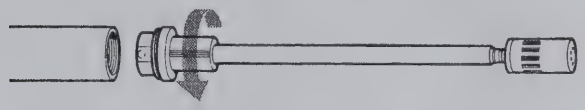
Dynamic range More than 95 dB

Environmental temperatures
−20°C to +60°C (−4°F to +140°F) for storage
0°C to +60°C (+32°F to +140°F) for operation

Design and specifications subject to change without notice.

BATTERY INSTALLATION

❶ Open the battery compartment as illustrated.



❷ Check for correct polarity and insert a battery into the battery compartment.

❸ Close the compartment.
Be sure to close the sleeve firmly, otherwise a malfunction or noise may occur due to the loose fit.

Notes

- If the microphone is not to be used for a long time, remove the battery.
- Battery life is listed in "SPECIFICATIONS". When the battery is exhausted, sensitivity will be decreased and distortion will be heard. When this occurs, replace with a new battery.

CONNECTIONS

The output connector of the microphone is the Cannon XLR-3-12C. Connect the microphone plug to the microphone input of a mixer, a tape recorder or an amplifier etc.
The attached microphone cable is 2.5 m (8 feet) long. If a longer cable is necessary, an extension cable up to 60 m (200 feet) may be used without affecting sound quality or performance.

NOTE ON USE

The ECM-41, with ist compact size and telescopic sleeve, is suitable for interview or various outdoor uses. A uni-directional microphone is more sensitive to sound directly in front of it than to side or back sound. Always point the top of the microphone head at the sound source for best pickup. Proper distance between the microphone and the sound source varies with different sound sources. If held too near some musical instruments, distortion may occcur. For low volume sound sources, bring the microphone close to the source. For speech, keep it about 10 cm (4 inches) away from the lips.

WIND SCREEN

To eliminate the effect of wind or breath noise, cover the microphone with the supplied wind screen. This will effectively attenuate wind or breath noise.

SPECIFICATIONS

General

Type	Electret condenser microphone
FET	Sony junction FET
Battery	Penlight battery R6 (AA) Manganese EVEREADY 1015 Alkaline EVEREADY E91
Microphone cable	4.1 mm dia., 2.5 m long (approx. $5/32$" dia., 8' long) double conductor shielded cable with a Cannon connector XLR-3-12C
Dimensions	Microphone head: 14 mm dia. × 29 mm (approx. $9/16$" dia. × $1\,1/8$") Grip: 19.2 mm dia. × 113.5 mm (approx. $3/4$" dia. × $4\,15/32$") Length (folded): 272.5 mm (approx. $10\,3/4$") (unfolded): 496.5 mm (approx. $19\,9/16$")
Weight	Approx. 201 g (7.1 oz) including battery
Finish	Non-reflective sation nickel finish
Supplied accessories	Wind screen .....1 Microphone holder.....1 Stand adaptor.....1 Carrying case 1

Performance

Frequency response	50 – 13,000 Hz (See the figure on page 7.)
Directivity	Uni-directional (See the figure on page 7.)
Output impedance	250 ohms ±20%, balanced
Output level (deviation ±3 dB)	Effective output level: −53.8 dBm (0 dBm=1 mW/10 μbar at 1,000 Hz) Open circuit voltage: 0.20 mV/μbar at 1,000 Hz Recommended load impedance is more than 3 k ohms.

Sears

OWNERS MANUAL

MODEL NO.
316.35580600

SEARS BOOM MIKE HEADSET

Pin Connection for
Kenwood TR 7400A and
Heath HW 30 Amateur
Pin 1 - Yellow
Pin 2 - Red
Pin 3 - Gnd
Pin 4 - Blue

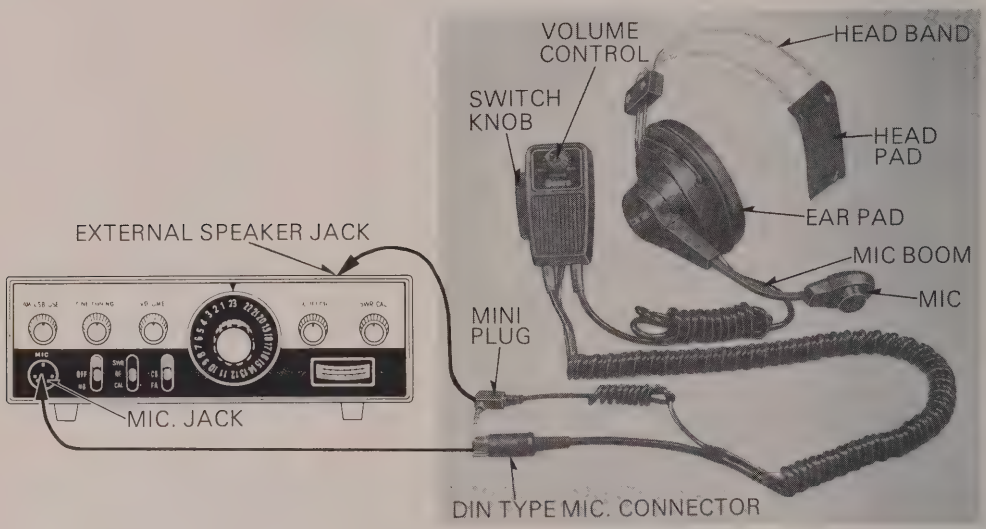
KNOW YOUR UNIT

Read this booklet so you will be able to enjoy all the features in your BOOM MIKE HEADSET.

Sears, Roebuck and Co., Chicago, IL 60684

Before connecting the Boom Mike Headset to your CB radio be sure to turn the power off and set the volume control to the minimum position.

EXPLANATION OF FEATURES AND CONTROLS



OPERATION

1. Plug the DIN type mic. connector into the mic. jack of your Sears CB radio as shown in the illustration.
2. Plug the mini plug into the external speaker jack of your Sears CB radio as also shown in the illustration.
   NOTE: Before plugging in the mini plug, adjust the volume control knob on the control box to the maximum counterclockwise position.
3. Adjust the angle and the length of the Boom Mike to the proper position.

4. Clip the control box on to your shirt pocket or on your waist belt.
5. Adjust the volume controls in the control box and in your CB radio to a suitable listening level.

SPECIFICATIONS

HEAD PHONE

TYPE:	DYNAMIC
IMPEDANCE:	10 Ohms
FREQUENCY RESPONSE:	100—8,500 Hz
SENSITIVITY:	110 dB at 500 Hz WITH 27 mW SIGNAL APPLIED

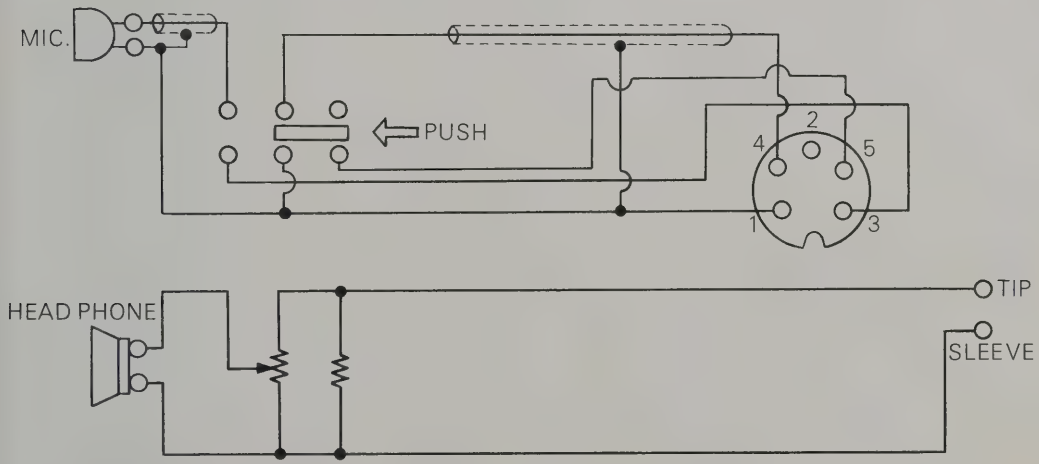
MICROPHONE

TYPE:	DYNAMIC, NOISE-CANCELLING
IMPEDANCE:	500 Ohms
SENSITIVITY:	−82 ± 7 dB at 1 KHz (0 dB: 1 V, 1 μ bar INPUT OPEN CIRCUIT)

EFFECTIVE NOISE

CANCELLATION:	−10 dB at 1 KHz

SCHEMATIC DIAGRAM



WARRANTY

FULL 90 DAY WARRANTY ON BOOM MIKE HEADSET

For 90 days from the date of purchase, Sears will replace the Boom Mike Headset, free of charge, if it fails to work properly due to defeet in materials or workmanship.

To obtain warranty service, simply return the Boom Mike Headset to the nearest Sears store or Service Center throughout the United States.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Sears, Roebuck and Co.
BSC 41-3
Sears Tower
Chicago, IL 60684

Printed in Japan

REALISTIC®

HIGHBALL DYNAMIC MICROPHONE

Catalog Number: 33-984A

Your *REALISTIC Highball Dynamic Microphone* provides the performance your PA or recording system needs! Its unidirectional design cuts down on extraneous noises and increases sensitivity. You'll also find it effective against feedback problems often found in mikes with broader pickup patterns.

CUSTOM MANUFACTURED FOR RADIO SHACK, A DIVISION OF TANDY CORPORATION

FEATURES

- Dual (selectable 600 and 10K ohm) impedances to match a wide range of equipment.
- Built-in filter to reduce wind and "pop" noises.
- Unidirectional pattern reduces feedback and undesired pickup.

IMPEDANCE SELECTION

Your Highball Dynamic Mike is set to 600 ohm impedance. To change to 10K ohm, follow these steps:

1. Refer to Figure 1. Loosen the connector fitting screw on the grip case end and remove it.
2. Pull out the connector. You'll find a socket with a yellow wire inserted into the #3 terminal. Remove this socket. You'll find another socket with a blue lead. Insert this into the #3 terminal.
3. Position the socket with the yellow lead in the middle part of the connector.
4. Return the connector to the grip case. Tighten the fitting screw.

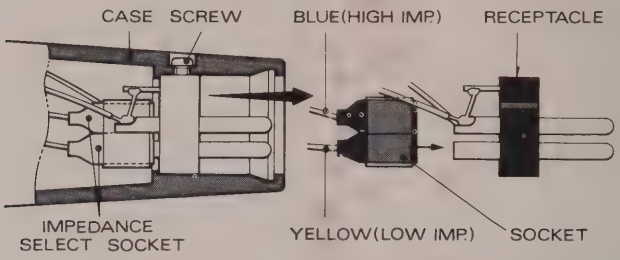


FIGURE 1

INTERNAL CONNECTIONS

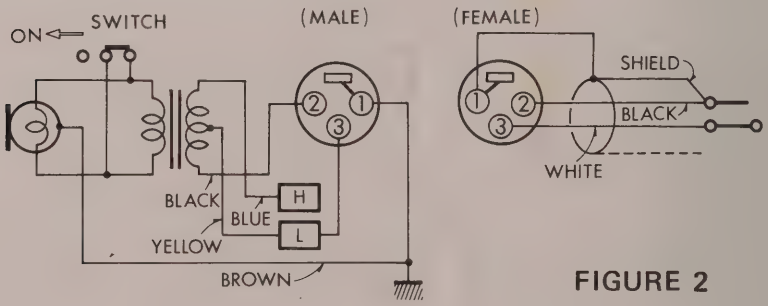


FIGURE 2

FREQUENCY RESPONSE CURVE

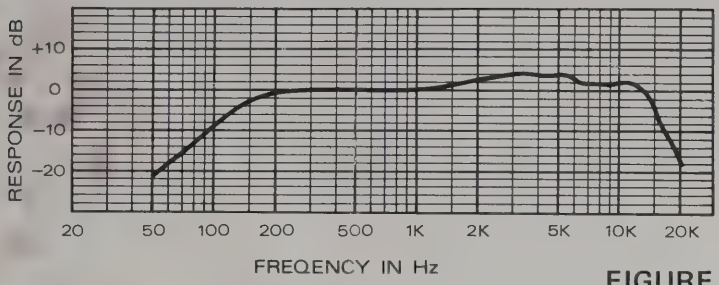


FIGURE 3

POLAR PICKUP PATTERN

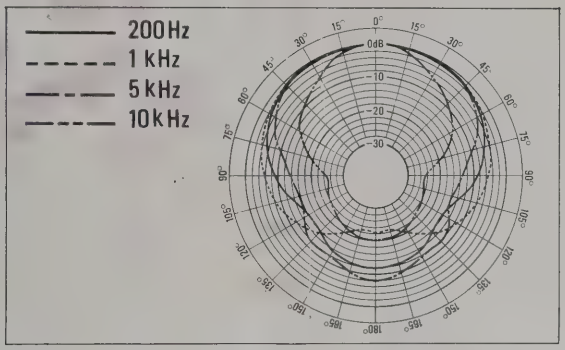


FIGURE 4

SPECIFICATIONS

Type	Dynamic
Directivity	Unidirectional
Impedance	600/10K ohms (Dual)
Sensitivity (at 1000 Hz)	−75dB (600 ohms) / (0dB=1V/μbar) −63dB (10K ohms)
Wind Noise Level	Less than 40dB SPL
Induction Noise Level	Less than 5dB SPL
Cable	1/5" (5 mm) Dia x 16.4 ft. (5 m)
Connector	3-pin Audio Connector
Plug	1/4" (6.35 mm) Diameter Phone Plug
Case	Zinc and Plastic
Case Finish	Matte Metallic
Accessories	Microphone Holder
Weight	15.87 oz (450 g) with cable

OVERALL DIMENSIONS

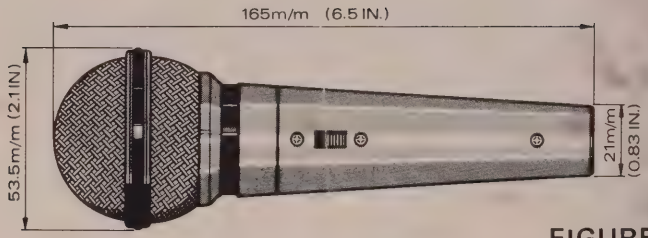


FIGURE 5

RADIO SHACK LIMITED WARRANTY

This product is warranted against defects for 90 days from date of purchase from Radio Shack company-owned stores and authorized Radio Shack franchisees and dealers. Within this period, we will repair it without charge for parts and labor. Simply **bring your Radio Shack sales slip** as proof of purchase date to any Radio Shack store. Warranty does not cover transportation costs. Nor does it cover a product subjected to misuse or accidental damage.

EXCEPT AS PROVIDED HEREIN, RADIO SHACK MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

We Service What We Sell

RADIO SHACK, A DIVISION OF TANDY CORPORATION

U.S.A.: FORT WORTH, TEXAS 76102
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TANDY CORPORATION

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1A4

Printed in Japan
14-30-260-02 K28

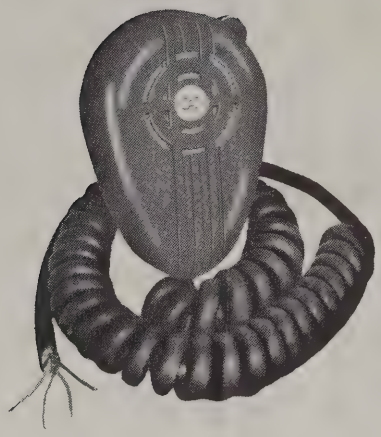
instructions

FOR THE

HEATHKIT

HAND-HELD MICROPHONE

Model GH-12A



INTRODUCTION

The HEATHKIT Model GH-12A Hand-Held Microphone is a high impedance type, specially designed for use with radio transmitters. It features tailored response for voice communication and is particularly suitable for the SSB mobile transmitters. The coiled microphone cord and the mounting clip allow handy placement in any installation.

The Microphone can be used with the switch button for push-to-talk operation, or for VOX operation if the switch is not used. Appropriate connections should be made at the transmitter end of the microphone coiled cord.

SPECIFICATIONS

Type Of Element	High impedance piezo - ceramic.
Sensitivity	-57 dB; below 1 volt per microbar at 2500 Hz.
Frequency Range	100 to 5000 Hz.
Peak Response Frequency	2300 Hz.
Microphone Switch Rating	120 VDC at 1/2 ampere maximum.

PARTS LIST

PART No.	PARTS Per Kit	DESCRIPTION
480-58	1	Microphone, with 8 foot coiled cord and clip
595-1059	1	Instruction sheet

PRINTED IN U.S.A.

INSTALLATION

Figure 1 shows the wiring of the microphone as it is furnished.

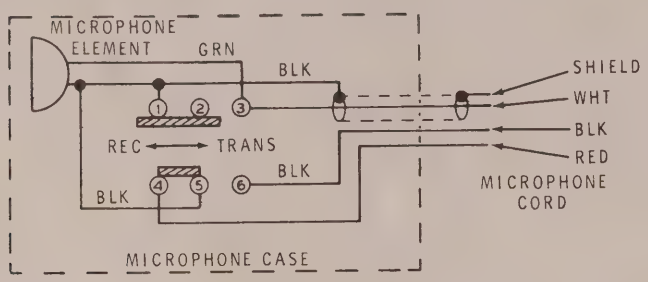


Figure 1

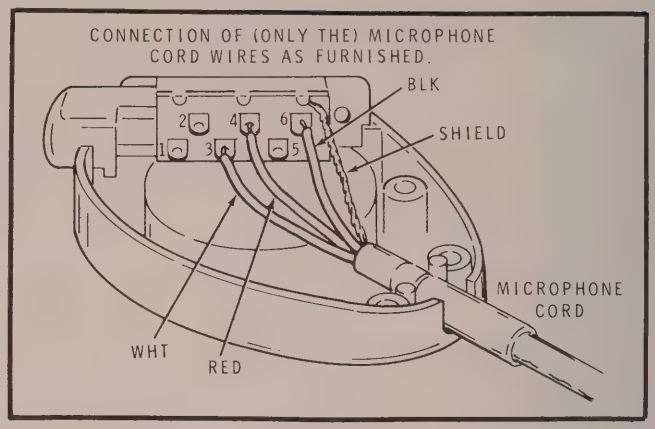
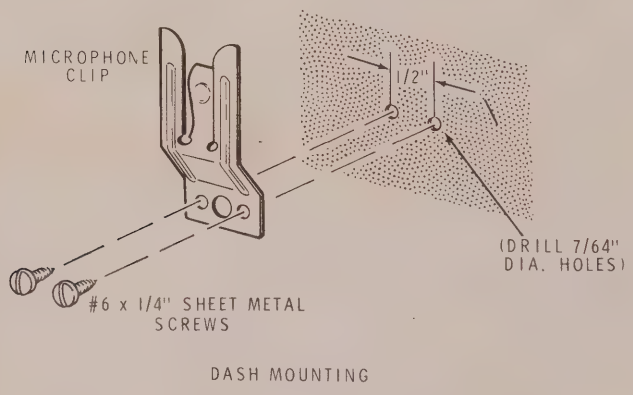


Figure 2

MOUNTING MICROPHONE CLIP

The microphone clip may be installed on the cabinet of the transmitter or on the dash of your automobile, as shown in the following illustrations.



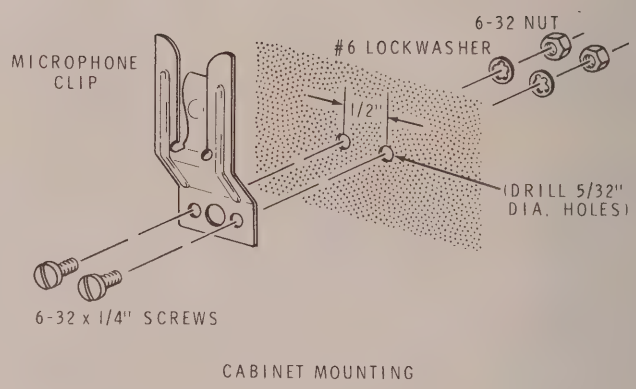


Figure 3

INSTALLATION WITH HEATH EQUIPMENT

Figure 4 shows how to connect the microphone cord to an Amphenol connector #80MC2M. Use this connector with Heath SB and HW series of transmitters and transceivers.

USE WITH OTHER THAN HEATH EQUIPMENT

The Microphone is wired for both VOX and PTT (push-to-talk) operation. If you wish to wire the Microphone for "PTT only," perform the steps under that heading.

VOX And PTT Connections

1. Connect the white (shielded) wire to the connector pin, or terminal, leading to the input of the first audio stage.

2. Connect the shield so it will be grounded to the chassis.

3. Connect the black wire to the lower potential end of your transmit-receive relay, or to the point in the relay amplifier tube circuit which, when grounded, will cause the tube to conduct and close the relay.

4. With the above connections, the Microphone operates VOX with the microphone button released and PTT with the button depressed.

NOTE: The red wire is available for a circuit that should be grounded in the receive mode and opened during transmit (PTT only).

PTT Only Connections

1. Perform steps 1, 2, and 3 under "VOX and PTT Connections."

2. Open the microphone case by removing the five phillips screws. Be sure to observe how the interior components are positioned so they may be properly replaced.

3. Unsolder and remove the white microphone cord wire from switch contact 3.

4. Connect the white microphone cord wire to switch contact 2 (S-1).

5. Reassemble the microphone.

With the above connection (steps 3 and 4), the audio input (white) wire is grounded when the microphone button is released. Depress the button to (a) connect the audio input wire to the microphone element and (b) to operate the transmit-receive relay.

NOTE: THE MICROPHONE CORD MAY BE SHORTENED IF YOU PREFER. HOWEVER, THE CORD MUST NOT BE CUT OFF CLOSER THAN TWO INCHES FROM THE FIRST COIL.

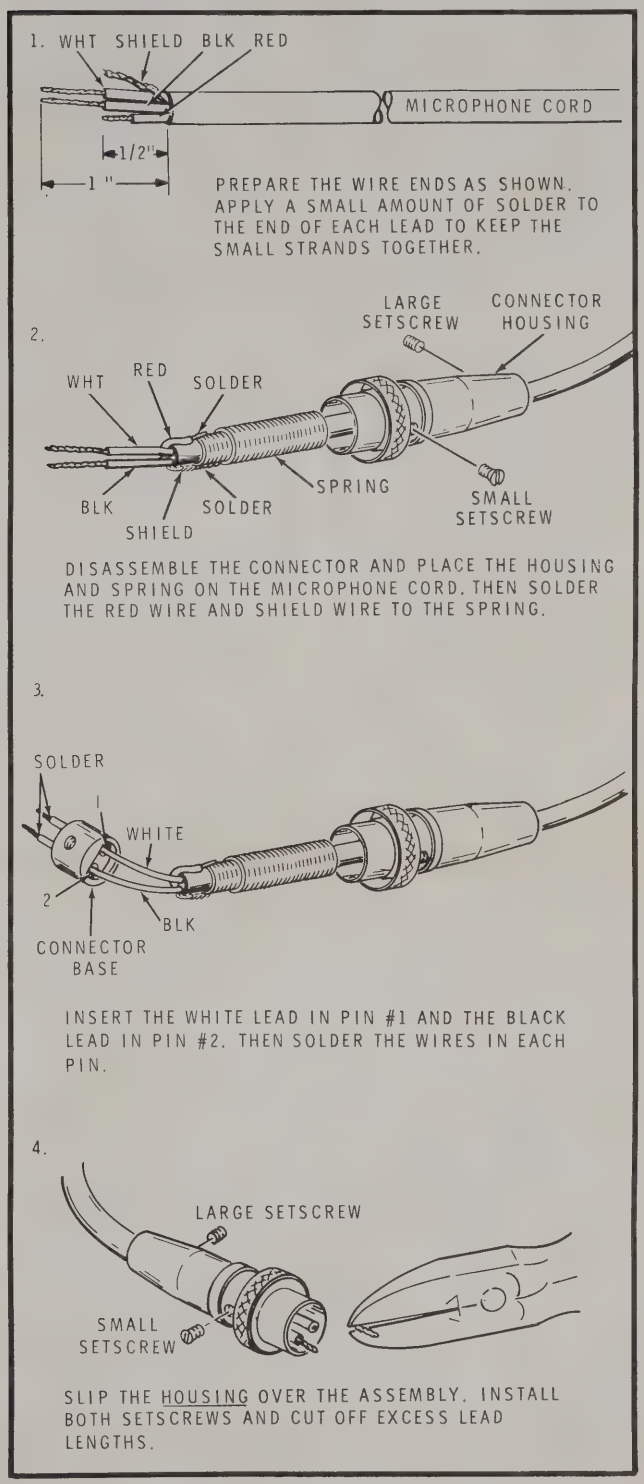

1. WHT SHIELD BLK RED
MICROPHONE CORD
1/2"
1 "
PREPARE THE WIRE ENDS AS SHOWN. APPLY A SMALL AMOUNT OF SOLDER TO THE END OF EACH LEAD TO KEEP THE SMALL STRANDS TOGETHER.
2.
LARGE SETSCREW
CONNECTOR HOUSING
WHT
RED
SOLDER
SPRING
BLK
SOLDER
SHIELD
SMALL SETSCREW
DISASSEMBLE THE CONNECTOR AND PLACE THE HOUSING AND SPRING ON THE MICROPHONE CORD. THEN SOLDER THE RED WIRE AND SHIELD WIRE TO THE SPRING.
3.
SOLDER
1
WHITE
2
BLK
CONNECTOR BASE
INSERT THE WHITE LEAD IN PIN #1 AND THE BLACK LEAD IN PIN #2. THEN SOLDER THE WIRES IN EACH PIN.
4.
LARGE SETSCREW
SMALL SETSCREW
SLIP THE HOUSING OVER THE ASSEMBLY. INSTALL BOTH SETSCREWS AND CUT OFF EXCESS LEAD LENGTHS.

Figure 4

DRAKE 1525 EM MICROPHONE

The R. L. Drake Company 1525 EM Microphone has an 'auto-patch' encoder built-in with a dynamic microphone element. The low impedance dynamic microphone provides excellent audio quality throughout the voice frequency range from 300 to 5,000 Hz. The 500 ohm impedance allows use with units designed for dynamic microphones and also with units with high impedance input.

The encoder provides the required dual-tone frequencies for operation with repeaters equipped for 'auto-patch'. The tone encoder is designed with a complementary MOS enhancement mode device, the Motorola MC14410. It is designed to accept digital inputs in a 4 x 3 matrix format, and to digitally synthesize the high and low band frequencies specified by telephone tone dialing systems. The inputs are originated in the Digitran® high reliability keyboard from a 4 x 3 matrix keypad, which generates 4 row and 3 column input signals in a 2 of 7 format. Master clocking for the MC14410 is achieved from a crystal controlled 1 MHz oscillator.

The encoder output tone levels are factory adjusted for the correct level when compared with average operator voice levels. Tone levels which are too high or too low may result in erratic or unreliable operation when used with a telephone dialing system. Before making any adjustment in the tone level control, determine if the microphone gain control in the transceiver is correctly set for desired voice level. If necessary, the encoder tone levels may be adjusted by removing the four screws located on the rear of the microphone case, and adjusting potentiometer R6 for desired levels.

Single frequency tones may be generated by depressing two (2) keys in the same row or column simultaneously. The encoder supply voltage is obtained from the transceiver through the microphone jack and plug. A voltage in the range of +7.5 to +15 V must be supplied to pin 4 of the microphone jack. The necessary modifications to R. L. Drake Company transceivers are detailed in the attached schematic diagrams.

The 1525 EM microphone may be used with most FM transceivers. Due to the wide variety of connectors used by various manufacturers, only the microphone wiring connections are shown in detail on the attached schematic. In some cases it may be more practical to install the R. L. Drake Company microphone jack in the transceiver. The matching jack may be purchased from the R. L. Drake Company, Part No. 3281735.

SPECIFICATIONS:

Microphone Element:	Low impedance – dynamic
Frequency Response:	300-5000 Hz
Output Impedance:	500 ohms
Microphone Output Levels:	–72 dBm per microbar. Approximately 3 mV (–47 dBm) with average voice level.
Encoder Audio Level:	Adjustable from approximately 1 mV to 5 mV with internal potentiometer.
Frequency Tolerance:	Better than ±1% from –20°C to +50°C.
Supply Voltage:	+7.5 to +15 V obtained through microphone cable from transceiver.
Encoder Keyboard:	High reliability Digitran® keyboard.
Dimensions:	2.6" x 3.5" x 1.7" 6.6 x 8.9 x 4.3 cm. Weight: 8 oz. (.227 kg.)

OUTPUT FREQUENCY TABLE

KEY	LOW FREQUENCY Hz		HIGH FREQUENCY Hz
1	697	plus	1209
2	697	plus	1336
3	697	plus	1477
4	770	plus	1209
5	770	plus	1336
6	770	plus	1477
7	852	plus	1209
8	852	plus	1336
9	852	plus	1477
0	941	plus	1336
*	941	plus	1209
#	941	plus	1477

When a single digit key is depressed output frequency is a combination of low frequency and high frequency tones indicated in table.

SINGLE TONE OUTPUT

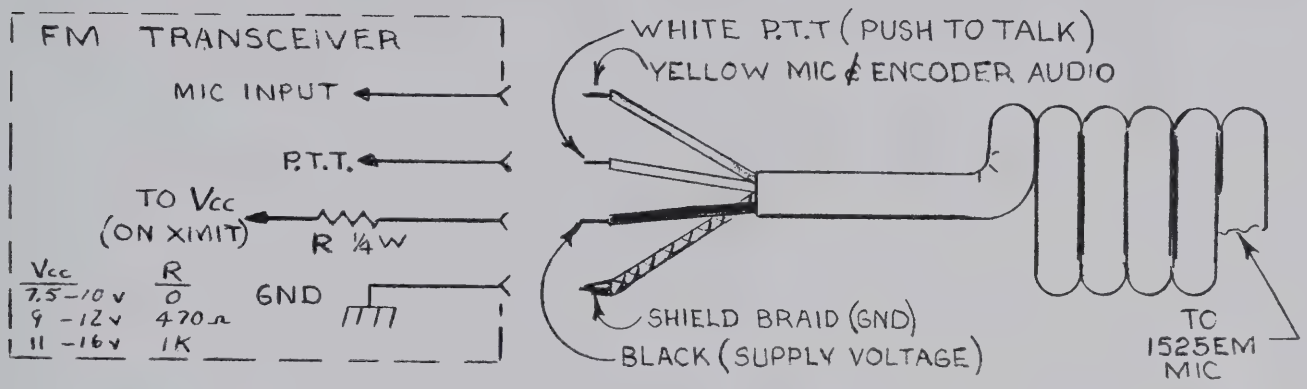
Single tone output is available by depressing two keys simultaneously in any row or column.

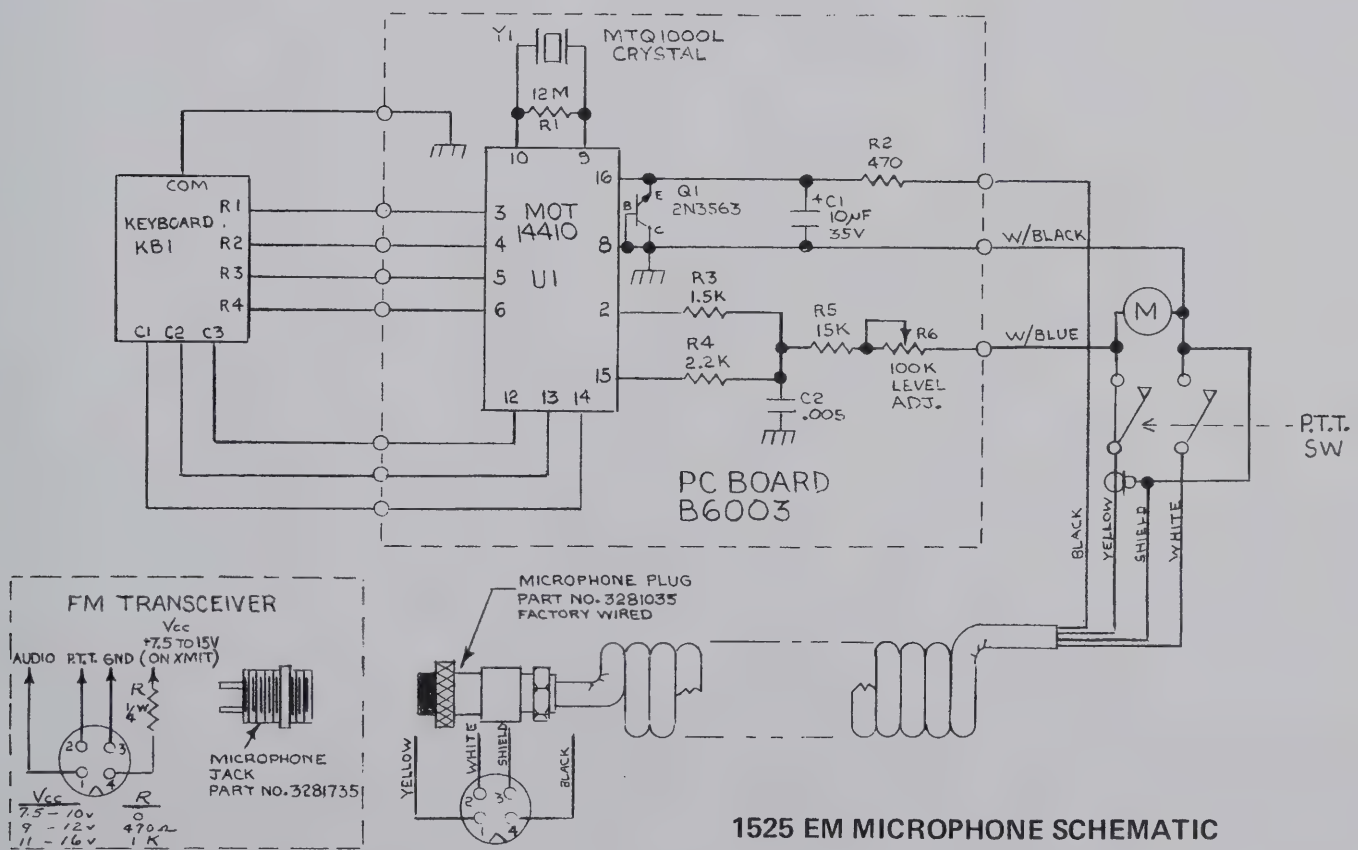
KEYBOARD			
1	2	3	697
4	5	6	770
7	8	9	852
*	0	#	941
1209	1336	1477	Frequency Hz

DRAKE

TR-33C
NO MODIFICATION REQUIRED
UNITS ARE FACTORY-WIRED FOR USE
WITH DRAKE 1525 EM MICROPHONES

FM TRANSCEIVERS OTHER THAN DRAKE

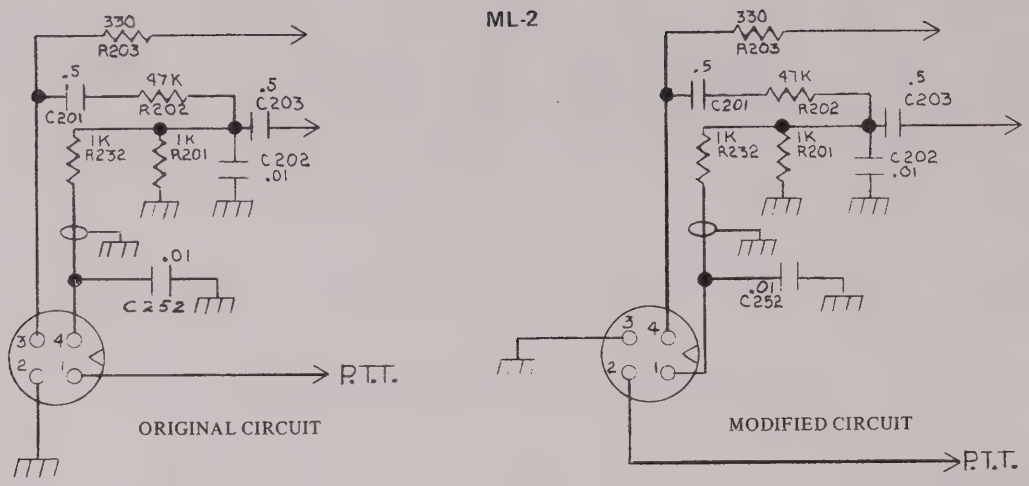




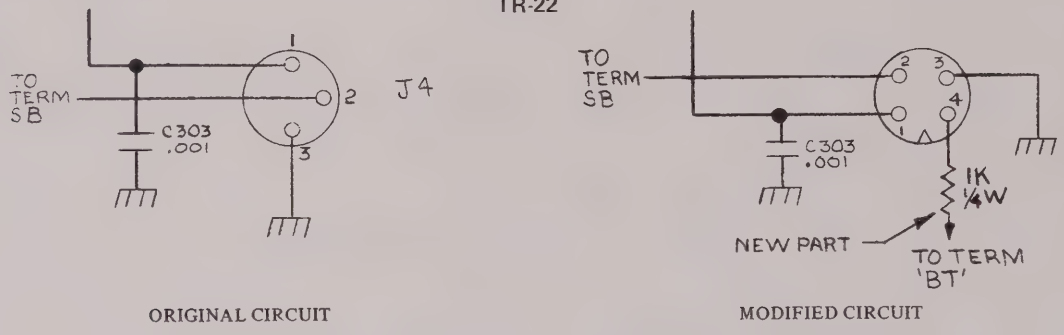
1525 EM MICROPHONE SCHEMATIC

DRAKE

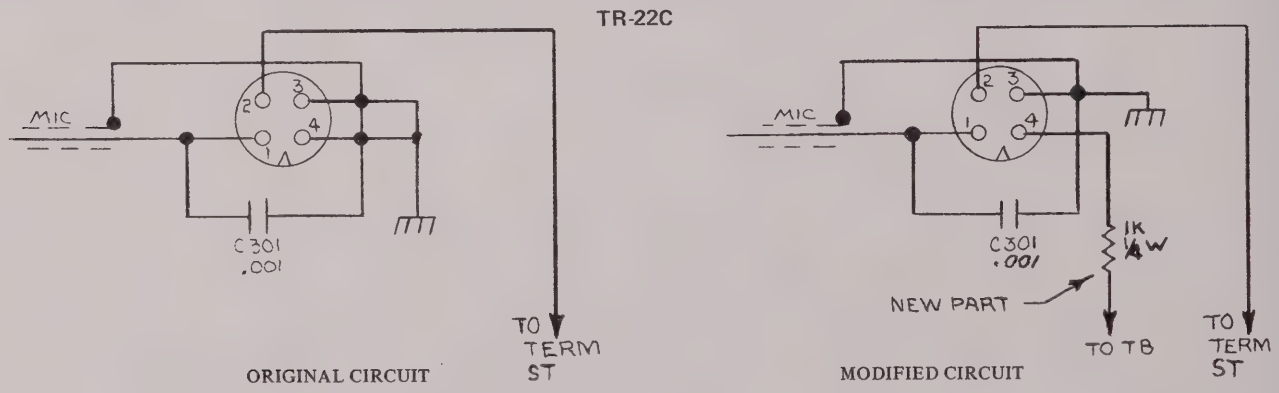
ML-2



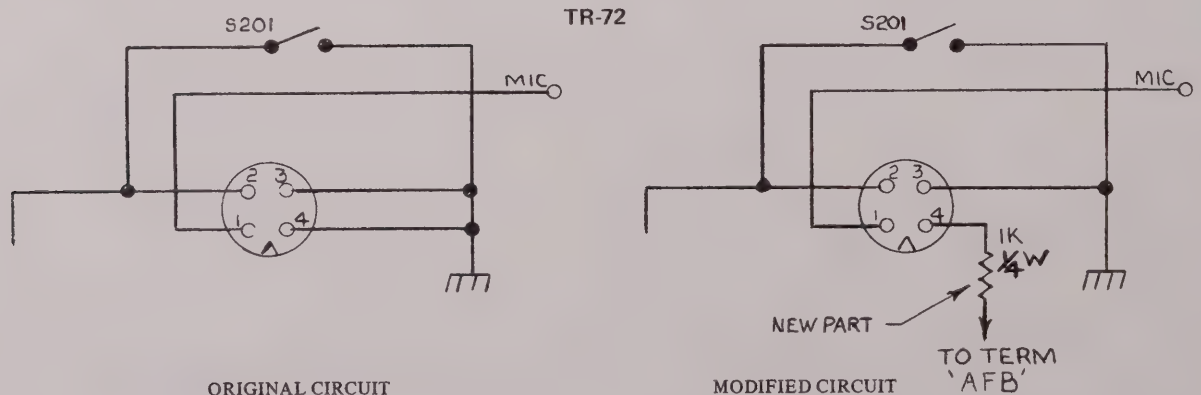
TR-22



TR-22C



TR-72



Telex

ProCom 200
AND
ProCom 300

ProCom 200

GENERAL DESCRIPTION

The ProCom 200 Headset provides high performance with virtually hands-free operation for both the amateur and professional radio operator. The combination of the electret microphone and the dynamic receiver elements makes this unit ideal for use in high-ambient-noise environments. The design of both receivers and microphone provides for high-quality sound production, preserving every accent and speech inflection with maximum accuracy.

The headset is constructed of stainless steel, aluminum, nylon, and high-impact-resistant plastic to provide rugged, yet comfortable, usage over extensive hours of operation. The units are fully adjustable. All major components can be serviced in the field.

RECEIVERS

The cloth-covered, dual-muff headset is designed for maximum comfort. The receivers offer a high degree of intelligibility through the use of dynamic receiver elements. These elements use Mylar diaphragms that are impervious to moisture and wide ranges of temperature fluctuation.

MICROPHONE

The boom-mounted electret microphone provides for high-quality performance. The frequency of the electret element is shaped to provide maximum performance through the voice range. Microphone impedance is selectable for use with either high or low microphone inputs. The microphone boom can be positioned close to the mouth or rotated away from the face, as it has a pivotal range of 300 degrees.

SPECIFICATIONS

RECEIVERS

Frequency Response [redacted] 100-8,000 Hz
Sensitivity: 103 dB (at 8 ohms, 1000 Hz)
Impedance: 8-20 ohms (low)

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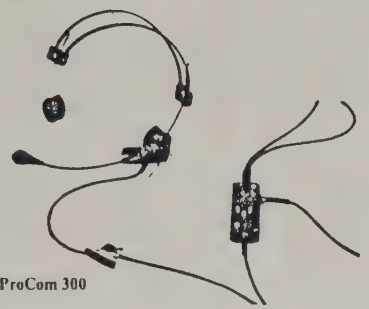
November 1981
38108-767

ProCom 200



ProCom 300

MICROPHONE

Frequency Response: [redacted] 100-8,000 Hz
Sensitivity: -55 dB (at 1 kHz re: 1 V/μbar)
Impedance (selectable): 50,000 ohms (high)
600 ohms (low)
FET Bias Battery: 1.5 volts (size N)

ProCom 300

GENERAL DESCRIPTION

The ProCom 300 Headset provides for high performance with virtually hands-free operation for both the amateur and professional radio operator. The rugged, yet lightweight style of this headset, is mechanically similar to Telex headsets that are used worldwide in commercial and general aviation. The combination of the electret microphone and the single-side ear tip receiver makes this unit ideal for use when it is desirable to pick up environmental sounds with one ear while monitoring the radio with the other.

TELEX

ProCom 200
AND
ProCom 300

The headband consists of two stainless steel springs sheathed in nylon webbing. The microphone/receiver housing assembly is connected to the headband by means of a stainless steel slider that permits over 2 inches (50 mm) of adjustment. The headband cushions are adhesive-backed foam and are field-replaceable. The headband separates up to 180 degrees to adjust for the most comfortable position.

RECEIVER

The single-side receiver provides "hearing aid" performance through the use of a single acoustical tube. This tube couples audio from the sensitive diaphragm cavity directly to the ear. At the end of the acoustical tube is a soft, surgical rubber ear tip which is inserted into the ear canal. The resultant occlusion of background noise raises the signal-to-noise ratio which allows for clear, intelligible reception of voice signals via AM, FM, or SSB frequencies.

MICROPHONE

The high-performance electret microphone is positioned so that the axis of the element is perpendicular to the mouth. This mounting minimizes problems with sibilant sounds. The response of the element has been shaped to maximize those critical frequencies in the voice that contribute to intelligibility. The element assures maximum performance for AM, FM, or SSB applications.

The boom-mounted microphone is fully adjustable. For added convenience, the boom pivots 55 degrees on the receiver housing. The boom may also be swiveled 180 degrees side to side for convenient use with either ear. Without the headband, the spring clip on the microphone/receiver assembly may be used with a wide variety of eyeglass styles.

SPECIFICATIONS

RECEIVER

Frequency Response: [redacted] 100-3,500 Hz
Sensitivity: 120 dB (re: 0.0002 dynes/cm² with 1 mW input at 1 kHz)
Impedance: [redacted] 500 OHMS

MICROPHONE

Frequency Response: [redacted] 100-8,000 Hz
Sensitivity: -55 dB (at 1 kHz re: 1 V/μbar)
Impedance (selectable): 50,000 ohms (high)
600 ohms (low)
FET Bias Battery: 1.5 volts (size N)

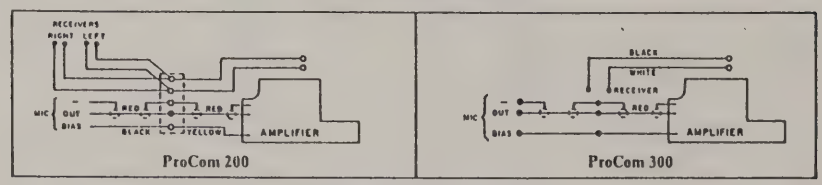
ProCom 200 and ProCom 300
VOX OPERATION

The ProCom 200 and the ProCom 300 Headsets have an in-line OFF/ON switch that allows for direct control of the transceiver VOX circuitry. The OFF/ON switch is placed in the ON position for direct VOX control.

The headsets also have a provision for remote switching by hand or foot. A user-supplied switch or the recommended optional Telex FS-1 Foot Switch or the Telex HS-1 Hand Switch may be used. The OFF/ON switch is placed in the OFF position for remote control.

The headsets come with 8 feet (2.4 m) of unterminated cables that begin at the OFF/ON switch/amplifier housing: one set of cables leads to the transceiver and the other cable leads to the optional foot or hand switch. The lead wires are stripped, tinned, and color-coded.

WIRING DIAGRAMS



ProCom 200 | ProCom 300

ORDERING INFORMATION

Manufactured in U.S.A. | Specifications subject to change without notice | Litho in U.S.A.

TELEX

TELEX COMMUNICATIONS, INC.
Divisions: HY-G[illegible] • M[illegible] • TURNER•

8601 Northeast Highway 6 • Lincoln, Nebraska 68505 U S A • Telephone: (402) 467-5321 • telex, Hygain Lcn a 48-4324

Addendum to Pro Comm 200 & 300 Instruction Manual

The green and yellow goes to the audio head phone jack.

The initials noted at the bottom of the instruction manual are:

NC - normally closed (not used in most amateur rigs)
NO - normally opened
C - common
PTT - push to talk

Green - to transceiver head phone jack.
Yellow - to transceiver head phone jack.
(Either one can be grounded. Other lead to Audio)
Black-NC -- to transceiver Push to Talk Control, not used.
Red-C -- to transceiver Push to Talk Control, ground chassis.
Blue-NO -- to transceiver Push to Talk Control, Push to Talk Hot.
Shield-ground -- side of microphone jack input.
White-Audio input to transceiver.

430 4WH. Kenwood, TS-520, TS-820, TS-120, T-599D, TS-180 HI3

BLU Pin 1 -- white
SHLD PIN 7 Pin 2 -- blue
RED 8 Pin 3 -- red
Pin 4 -- shield
Yellow and green audio head phone jack

Black not used, leave unterminated.
Applies to Kenwood & Yaesu.

Yaesu, FT series (101's, 901)

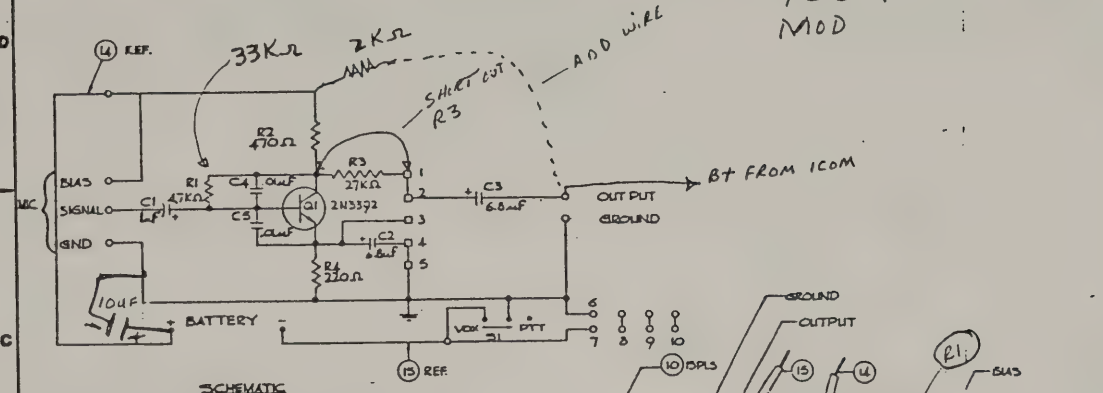
Pin 1 -- shield/red
Pin 2 -- white
Pin 3 -- blue
Pin 4 -- blank
Yellow and green audio head phone jack

YAESU FT-107M
PIN 8 — WH
PIN 7 — SHLD
PIN 7 — RED
PIN 6 — BLUE
(BLK — NC)

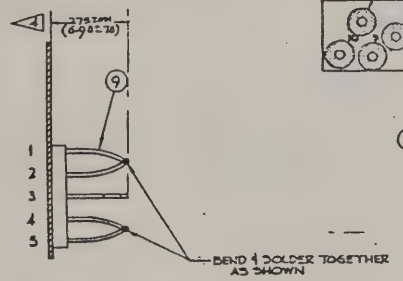
(YEL/GRN TO EXT SPKR)

TELEX

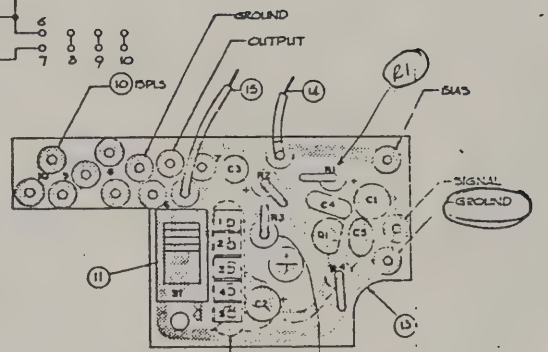
ICOM
MOD



SCHEMATIC



DETAIL A



SEE DETAIL A

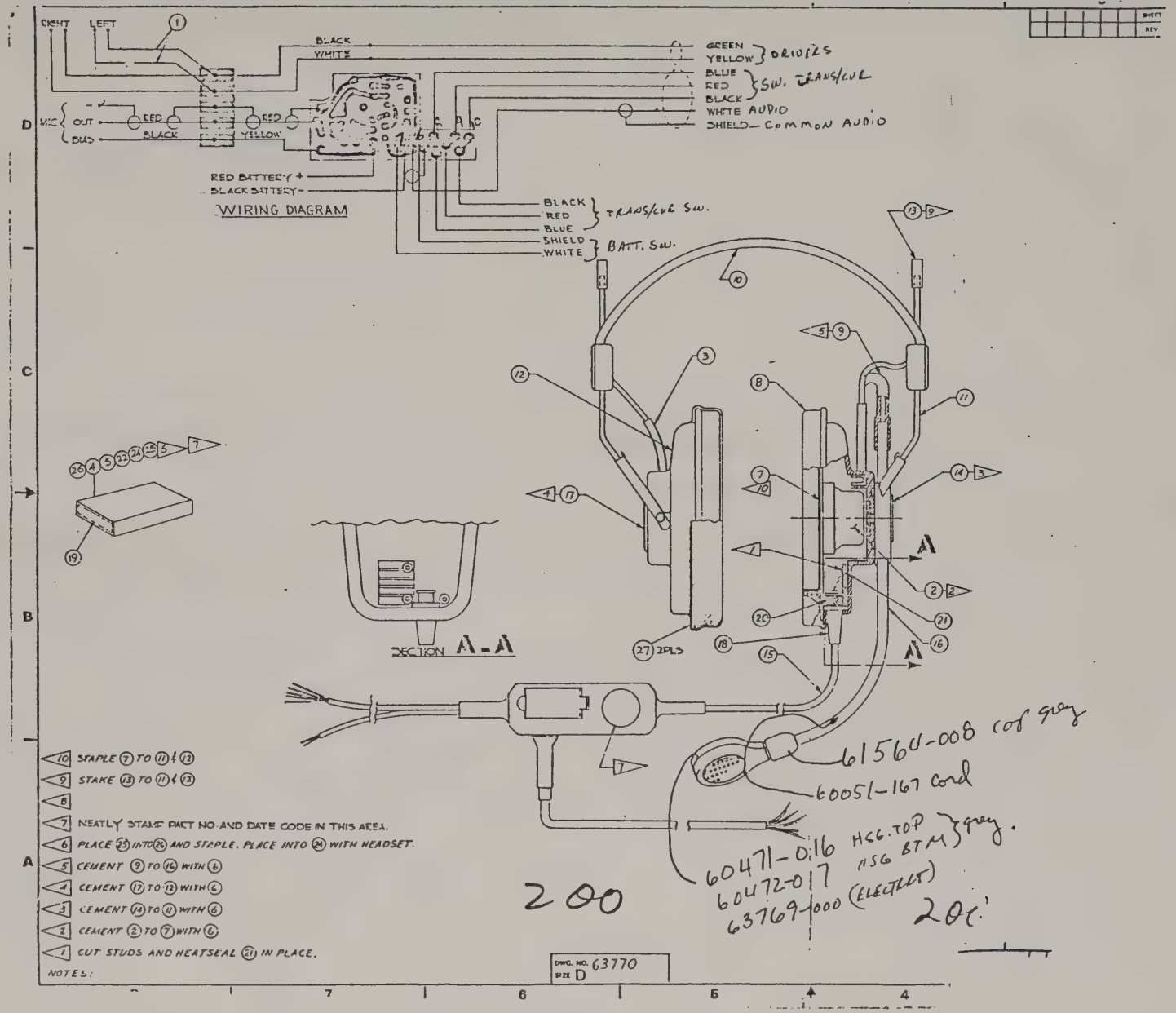
PRO COM
200/300

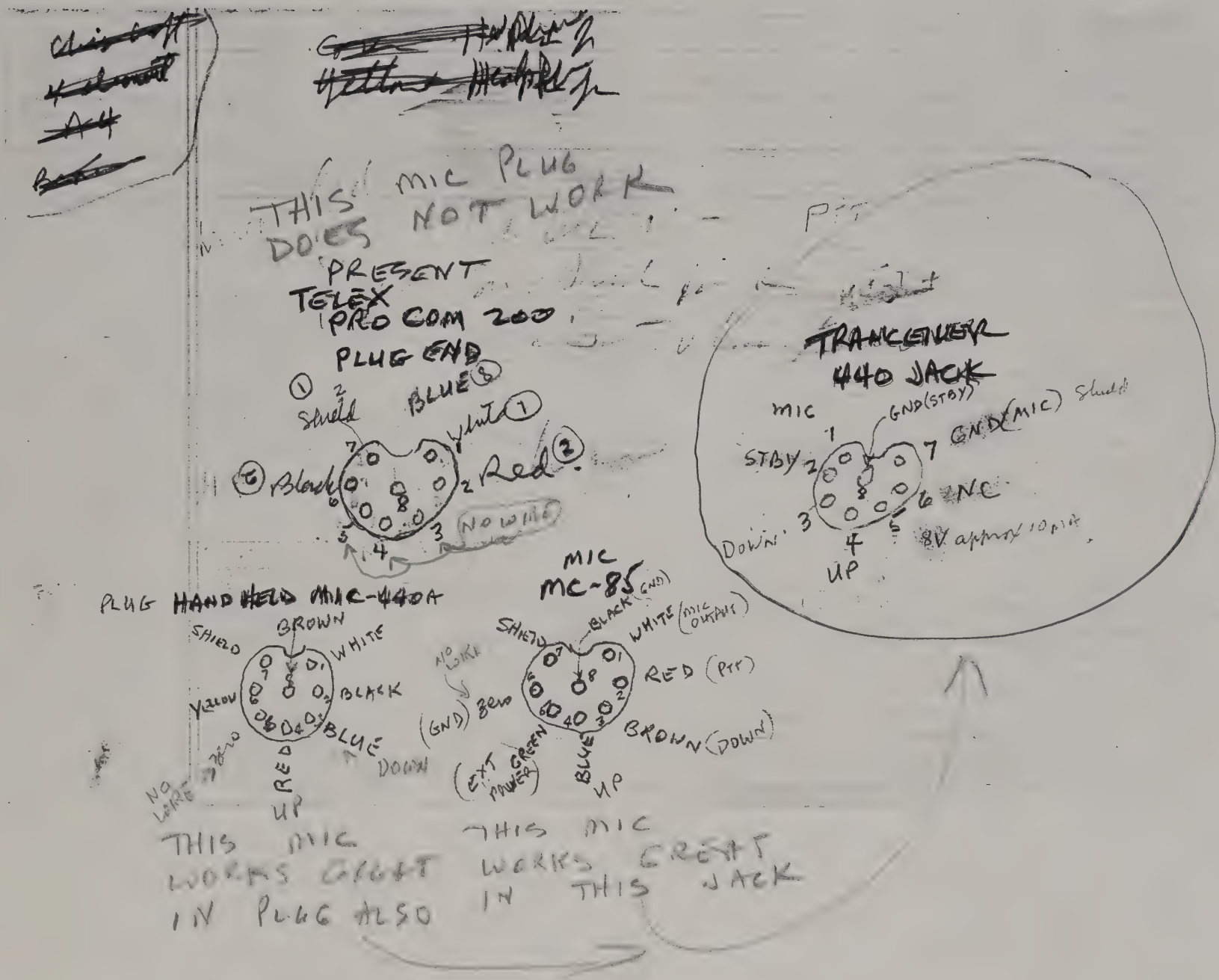
4 TRIM (9) AS SHOWN, 5 PLACES
3 - MAX COMPONENT HEIGHT (OTHER THAN (9) OR (11)) .300
2 - FOR TEST REF.
HI-Z OUT, CONNECT 1 TO 2 & 4 TO 5 AS SHOWN
LO-Z OUT, CONNECT 2 TO 3 ONLY.
1 - UNIT MUST MEET TEST SPEC. T-1406

NOTE :

DWG. NO. 63773
SIZE D

TELEX


RIGHT
LEFT
BLACK
WHITE
GREEN
YELLOW
BLUE
RED
BLACK
WHITE AUDIO
SHIELD — COMMON AUDIO
DRIVERS
SW. TRANS/CVR
MIC
OUT
BIAS
RED
BLACK
YELLOW
RED BATTERY +
BLACK BATTERY −
WIRING DIAGRAM
BLACK
RED
BLUE
SHIELD
WHITE
TRANS/CVR SW.
BATT. SW.
SECTION A-A
27 2PLS
61564-008 cord grey
60051-167 cord
60471-016 HCG. TOP
60472-017 HSG BTM
63769-000 (ELECTLET)
grey.
200
20'
10 STAPLE 7 TO 11 & 12
9 STAKE 13 TO 11 & 12
8
7 NEATLY STAMP PART NO. AND DATE CODE IN THIS AREA.
6 PLACE 25 INTO 26 AND STAPLE. PLACE INTO 24 WITH HEADSET.
5 CEMENT 9 TO 14 WITH 6
4 CEMENT 17 TO 12 WITH 6
3 CEMENT 14 TO 11 WITH 6
2 CEMENT 2 TO 7 WITH 6
1 CUT STUDS AND HEATSEAL 21 IN PLACE.
NOTES:
DWG. NO. 63770
SIZE D
SHEET
REV.


THIS MIC PLUG DOES NOT WORK
PRESENT TELEX PRO COM 200 PLUG END
Shield
BLUE
White
Red
Black
NO WIRE
TRANCEIVER 440 JACK
MIC
STBY
GND(STBY)
GND(MIC)
Shield
NC
DOWN
UP
8V approx 10 mA
PLUG HAND HELD MIC-440A
SHIELD
BROWN
WHITE
YELLOW
BLACK
BLUE
RED
NO LINE
DOWN
UP
THIS MIC WORKS GREAT IN PLUG ALSO
MIC MC-85
SHIELD
BLACK (GND)
WHITE (MIC OUTPUT)
NO LINE
(GND)
RED (PTT)
BROWN (DOWN)
(EXT POWER)
BLUE
UP
THIS MIC WORKS GREAT IN THIS JACK

Yaesu MD-1B8

MD-1 SERIES
DESK TOP DYNAMIC MICROPHONE

This microphone series is designed for especially high quality audio characteristics and convenient operation. A personalized callplate for the MD-1 is available with your callsign engraved on it. Simply fill out and return the attached coupon to Yaesu Musen, CPO Box 1500, Tokyo, Japan.

Features

1. A heavy diecast base and bronze element casing make the MD-1 a particularly durable, heavy-duty microphone for base station use.

2. The large dynamic element provides an extremely wide range audio response, and an internal switch is then used to select that portion of the audio spectrum that one chooses to emphasize, attenuating the lower frequencies according to the user's choice.

3. Output impedance may be selected via an internal switch, 600 or 50K ohms.

4. A dual pivoting mechanism allows both horizontal and vertical rotation to accommodate various locations and heights, while the microphone can also be easily separated from the base to provide for those situations where a hand-held microphone is most convenient. (If the microphone is electrically disconnected and used totally independently from the base, only 600 ohms impedance without scanning control is possible.)

5. The base of the MD-1 includes a large PTT switch bar and lock switch, as well as scanning UP, DOWN, and FAST switches.* The microphone contains a PTT slide switch (only).

Specifications

Type:
Dynamic

Frequency Response:
100 Hz – 15 kHz (–6 dB)

Sensitivity:
–73 dB at 600 ohms, –56 dB at 50K ohms

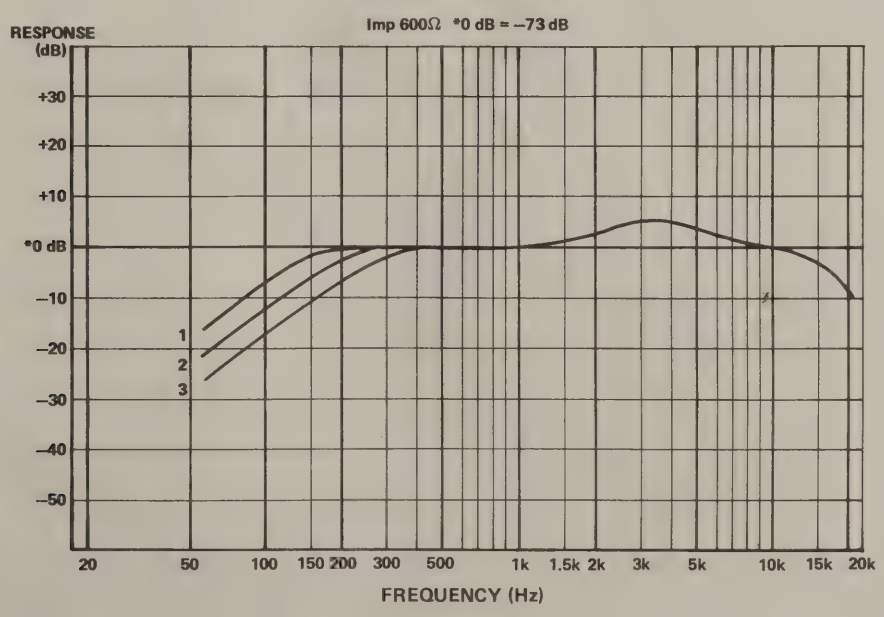
Directivity Pattern:
Unidirectional (teardrop)

Switches:
(Top)
PTT, PTT lock, Scan UP, DOWN and FAST*
(Bottom)
Audio Tone Response (3 positions)
Position 1: full range
Position 2: –5 dB at 100 Hz
Position 3: –10 dB at 100 Hz
Impedance Selector (600 ohms/50K ohms)

Dimensions:
Base: 98 x 160 x 165 mm (WHD)
Microphone: diameter 40.5 x 210 mm

Weight:
Base ~ 750g.
Microphone ~ 250g.

* Some models of the MD-1 series do not include the scanning switches.



PTT SWITCH (2)
Use this switch for PTT control when the microphone is used for hand-held microphone applications.

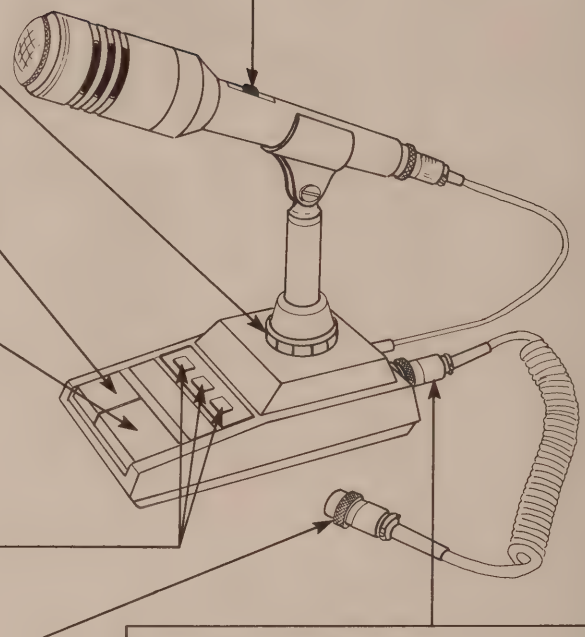
HORIZONTAL PIVOT LOCK RING
Loosen this ring (counterclockwise) to change horizontal position, then turn clockwise to tighten.

PTT LOCK SWITCH
Push to lock PTT ON, push again to release (receive).

PTT SWITCH (1)
Push to talk, release to receive.

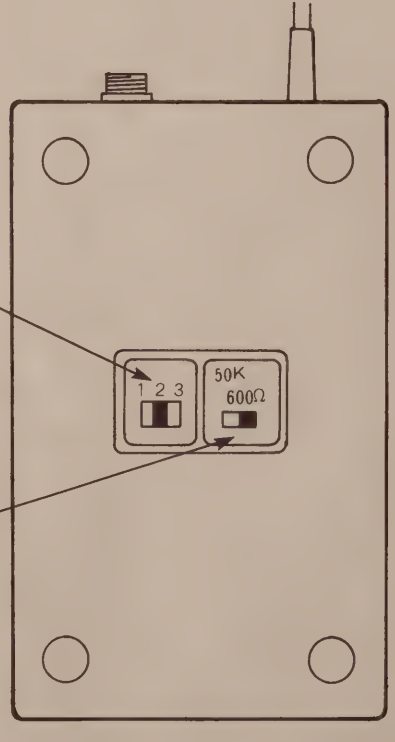
FREQUENCY SCANNING SWITCHES
Push UP or DOWN to scan in that direction slowly. Push UP or DOWN along with the FAST switch to scan FAST UP or FAST DOWN. (These controls do not operate when the MD-1 is used with a transceiver not equipped with scanning circuits.)

MICROPHONE PLUG A
Connect this plug to the MIC jack on the transceiver.



MICROPHONE PLUG B
Insert this plug into the jack on the base for desk stand operation, or into the microphone itself for hand-held microphone operation.

AUDIO TONE RESPONSE SWITCH
This switch sets the desired microphone response according to the operator's voice pitch, background noise and QRM conditions, and speech processing requirements.



IMPEDANCE SWITCH
Selects 600 ohms or 50K ohms according to the requirements of the transceiver's microphone input circuit.

MD-1B8

（8ピンプラグ　スキャンスイッチ付き）

適合機種

FT-ONEシリーズおよび今後開発する8ピンコネクタ使用のトランシーバ．なお，FT-ONEシリーズはインピーダンス600Ωで使用します）．

MD-1用コールサイン・プレートについて

弊社の通信機用高級ダイナミック・マイク“MD-1”をお買い上げいただき，ありがとうございました．

このマイクを末永くご愛用いただくために，貴局のコールサインを彫刻したコールサイン・プレートを用意しましたので，ご希望の節はお申し込みください．

八重洲無線　企画部

○下記の必要事項をご記入のうえ，500円相当の郵便切手を添えてお申し込みください．なお，ご注文いただいてから発送まで約二週間は必要ですから，あらかじめご了承ください．

----------キリトリ線----------

MD-1用コールサイン・プレート申し込み用紙

○貴方のご住所，郵便番号

○貴方のお名前とコールサイン

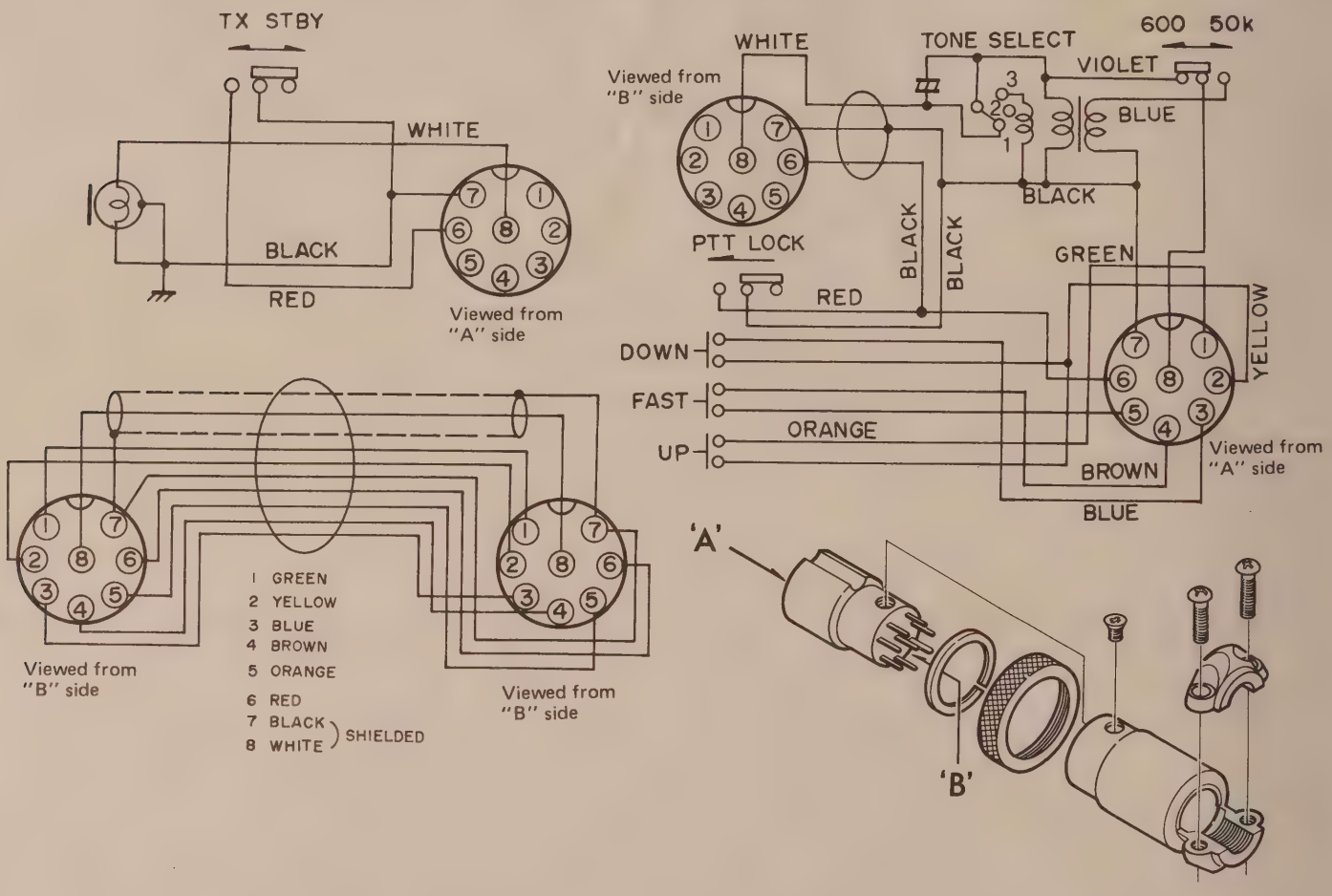
○申し込み先

〒146　東京都大田区下丸子1-20-2

MD-1B8

(This model includes an 8-pin microphone plug)

Use the MD-1B8 with the YAESU FT-ONE and new transceivers that have an 8-pin microphone jack.
The FT-ONE requires 600 ohms microphone impedance.



Thank you for purchasing our new MD-1 microphone. We hope that you will enjoy its high performance and quality for many years. If you would like to have your own call sign engraved on a metal plate for the MD-1 please fill out the coupon on this page and send it to us at the address below with a selfaddressed return envelope. We will pay the return airmail postage.

Public Relations Department
Yaesu Musen Co., Ltd.
CPO Box 1500
Tokyo, Japan

MD-1 callplate

Please print the following in block letters:

Name: _____

Call Sign: _____

(Offer not valid in Japan.)

MD-1 シリーズ
通信用デスクトップ型
ダイナミック　マイクロホン

MD-1 シリーズのマイクロホンは音質，操作性を重視して開発した本格的通信用マイクロホンです.

特　徴

1．ダイキャスト成型のハウジングとスタンド，ブロンズ仕上のトップケースを用いた重厚感あるデスクトップ型マイクロホンです.

2．大型ダイナミック型エレメントを採用した広い周波数帯域を基本に三段階に切り換えできる音質切換スイッチ（低域制限）で高忠実度の音域から，明瞭度が上がるローカットまで目的に応じて使い分けできます.

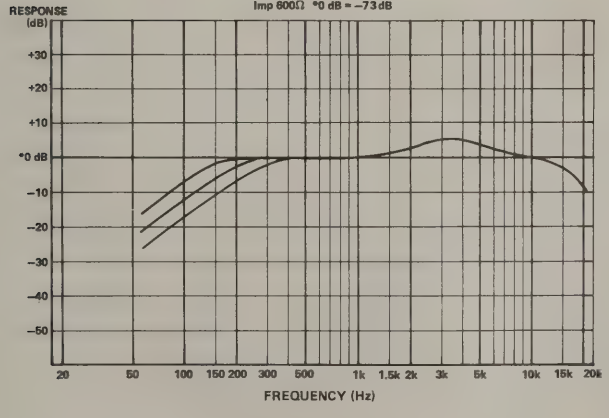
3．出力インピーダンスは600Ωと50kΩの切り換えが可能です.

4．上下，左右の首振り機能を持つスタンドによる角度方向，および本体をスタンドが分離した単独使用も簡単にできます.（マイクロホン本体のみでは，音質は広帯域，インピーダンスは600Ωのみになり，スキャン操作はできません.）

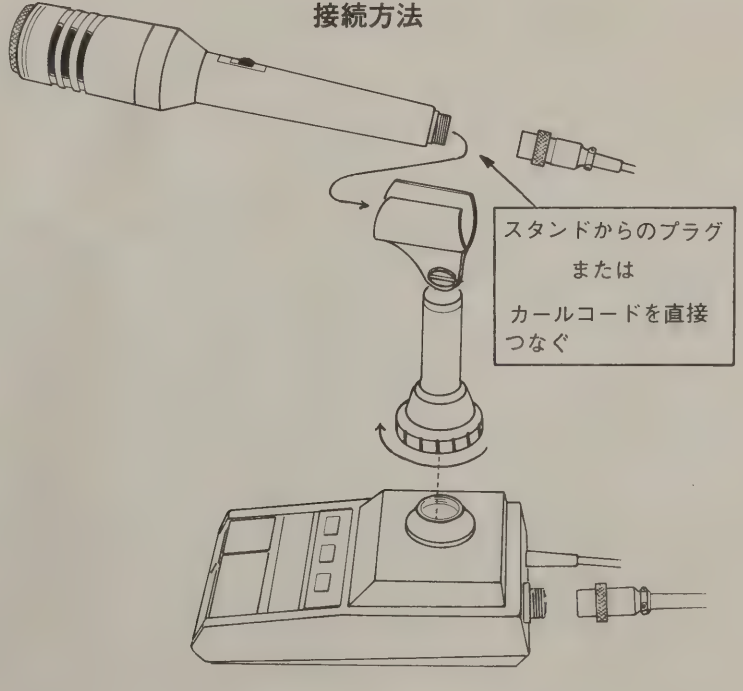
5．操作性を重視した大型の PTT スイッチと送信状態を保持する LOCK 機能と UP/DOWN と FAST のスキャンスイッチをスタンド側に，さらに本体のみで運用できるようスライド型の送受切り換えスイッチも組み込んであります.

定　格

形　　式	ダイナミックマイクロホン
周波数特性	100Hz～15kHz（−6dB）
トーンコントロール特性	TONE SELECT 1 ノーマル
	TONE SELECT 2 ノーマル　に対して−5dB(100Hz)
	TONE SELECT 3 ノーマル　に対して−10dB(100Hz)
感　　度	−73dB(600Ω)　−56dB(50kΩ)
機　　能	P.T.T.動作(ロック機能付)
	スキャニング機能(スキャニング機能付のみ)
インピーダンス	600Ω−50kΩ切り換え式
首振角度	垂直方向　100°
	水平方向　180°
寸　　法	スタンド　幅98×奥行160× 高さ(ホルダ水平時)165(mm)
	マイクロホン　40.5φ×210(mm)
重　　量	1kg



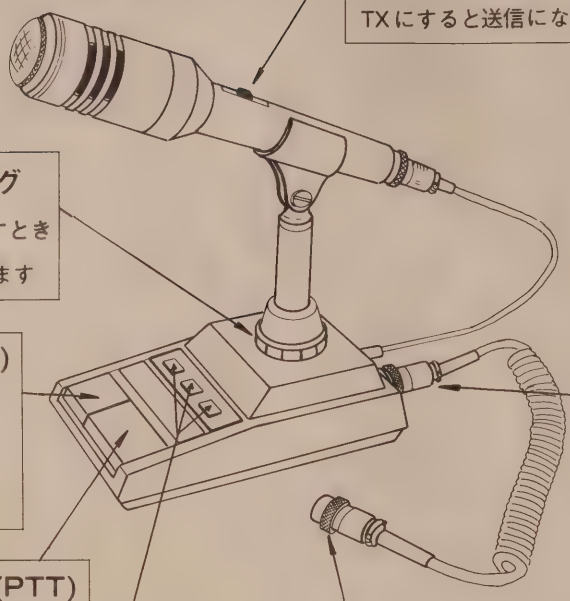
接続方法



各部の名称と操作

送受切り換えスイッチ

マイクロホンをスタンドからはずして使用する時の送受切り換えスイッチです.
TXにすると送信になります



マイクロホン固定リング

左右方向にマイクロホンを回すときに反時計方向に回してゆるめます

マイクロホンプラグB

デスクトップで使用する場合にはスタンドの背面ジャックにマイクロホン本体のみで使用する場合には直接マイクロホンに接続します

ロックスイッチ(LOCK)

送信状態をロックします.
解除する時はもう一度押します.

送受切り換えスイッチ(PTT)

押している時だけ送信になります.

マイクロホンプラグA

トランシーバのマイクロホンジャックに接続します

周波数のスキャニングスイッチ

(スキャニング機能付のみ)

UP又はDOWNスイッチとFAST を同時に押すと早送りになります.
(マイクによるスキャニング機能のないトランシーバには使用できません)

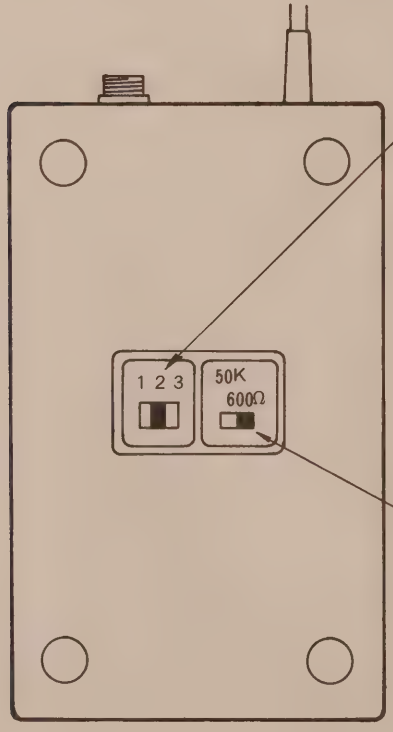
音質切り換えスイッチ

TONE SELECT 1：ノーマルな音質
TONE SELECT 2：ローカットした音質
TONE SELECT 3：2よりもさらにローカットした音質

“1”の位置はノーマルな全帯域で優れた音質で通信が楽しめますが,

- ○ スピーチプロセッサを使用した時など低域が強調される場合
- ○ 混信の多い時に明りょう度を上げたい場合
- ○ 声の質が低音気味の人

などでは“2”あるいは“3”の位置に切り換えて低域を抑えることができます(定格参照)
ローカル通信とDX通信，あるいはコンテストなど混信のはげしい時など目的に合わせて選択してください.



インピーダンス切り換えスイッチ

600Ωと50kΩ の切り換えができます.
トランシーバに合わせて設定してください.

729 & 729SR CERAMIC CARDIOID MICROPHONES

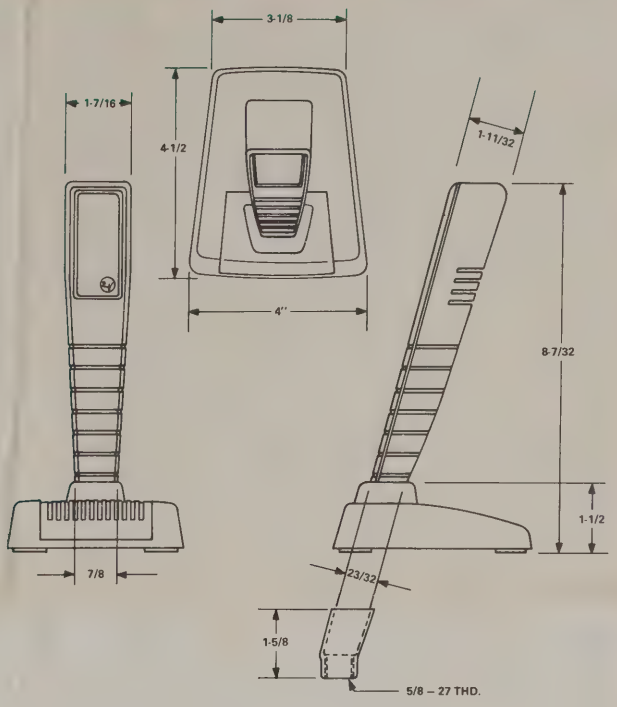


Figure 1 - Dimensions

DESCRIPTION AND APPLICATIONS

The Electro-Voice Model 729 is a cardioid microphone of the ceramic type, designed for public address, call and paging systems, dictating machines, home recorders, radio amateurs, and general communications. The mechanical construction utilized is inherently rugged, affording high protection from mechanical shock damage. The small, slim size makes it easy to handle and gives an attractive appearance.

The Model 729 is designed for use under a great variety of conditions and climates. Because of its excellent and uniform polar response, it is especially useful in locations where ambient noise and reverberation exist. The Model 729 can be used on a floor or desk stand or carried in the hand.

The cardioid characteristic of the Model 729 gives wide angle front pickup but is virtually dead from the rear. A working distance of six inches or more is recommended for best results. Working too close to a directional microphone gives an unnatural bass response. In addition, the Model 729 provides the following advantages:

1. The uniform cardioid characteristic allows nearly double the pickup range (distance from performer or sound source to the microphone) over that of the conventional omnidirectional microphone for average conditions of reverberation, acoustic feedback and room noise. For public address applications, this pickup range may be increased considerably by proper placement of loudspeakers so that direct and reflected sound strikes the microphone at the back (dead zone).

2. Random room noise and reverberations are reduced by a factor of 67%.

3. The microphone may be positioned to cancel or substantially diminish pickup of unwanted sound.

4. High output level of the Model 729 enables it to be used with any standard amplifier employing high impedance input.

729SRD Permits VOX operation in off position. Push-to-talk in on position.

SPECIFICATIONS

Generating Element:	Ceramic
Frequency Response:	60 to 8,000 Hz
Impedance:	Hi-Z. Can be used with any amplifier employing high-impedance input
Output Level:	−60 db (0 db = 1 volt/dyne/cm²) EIA sensitivity rating, −158 db
Polar Pattern:	Cardioid. See Figure 2.
Case Material:	Pressure die-cast zinc front and plastic back
Finish:	Metalustre gray front and medium gray back
On/Off Switch:	[redacted]
Dimensions:	See Figure 1.
Net Weight:	1 lb., including cable
Cable, 729:	8½ foot, single-conductor shielded. Additional cable reduces the output level but does not distort frequency response.
Cable, 729S:	8½ foot, three-conductor (one-shielded)

Stand Coupler: 5/8 inch –27 thread

Temperature: May be used in any climate. Will withstand 200° F.

Warranty: The Electro-Voice model 729 is guaranteed against defects in workmanship and materials.

ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

(The following specifications may be used when Model 729SR is required by substituting Model 729SR for model number 729.)

The microphone shall be an Electro-Voice model 729 or equivalent. The microphone shall be an unidirectional, ceramic type, with uniform response from 60 to 8,000 Hz. The microphone shall have a high impedance output that shall work into a standard grid resistance of from .5 to 2 megohms. The high impedance output level shall be –60 db with 0 db equalling 1 volt/dyne/cm^2. The EIA sensitivity rating shall be –158 db rising response. The case shall be of pressure diecast zinc front and gray plastic back. The microphone shall have a maximum net weight of 1 pound with cable. An 8½ foot, single-conductor, shielded cable shall be provided on the model 729. The model 729SR microphone or equivalent shall have an on/off switch that removes short circuits in the "On" position and closes from microphone relay circuit. Cable shall be three-conductor, one shielded.

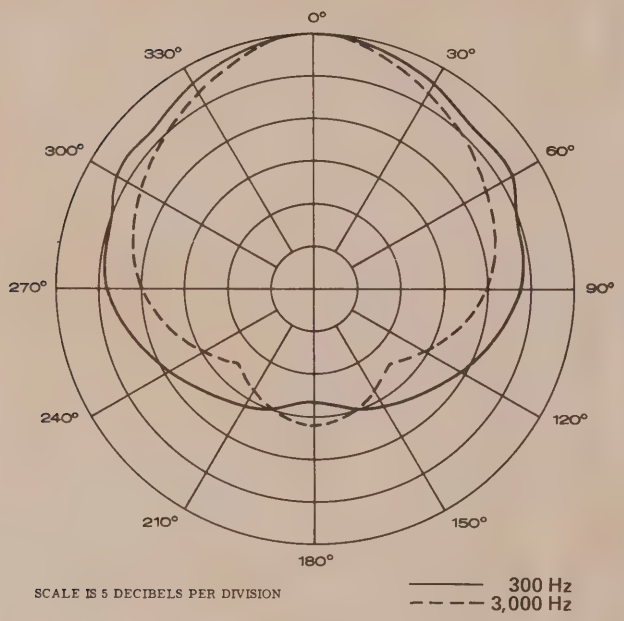


Figure 2 - Polar Pattern

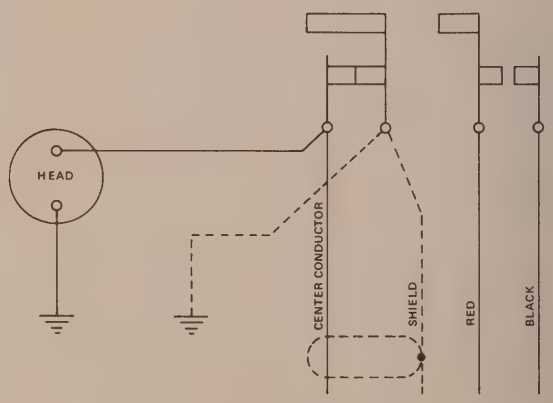


Figure 3 - 729SR Wiring Diagram

Bob Heil, K9EID

Wiring unbalanced microphones to XLR inputs

There is a great movement in the Amateur Radio community to use professional recording studio mixing consoles, tube preamplifiers or the W2IHY EQ to process their microphone audio signal before it gets to the Amateur Radio transceiver microphone preamplifier.

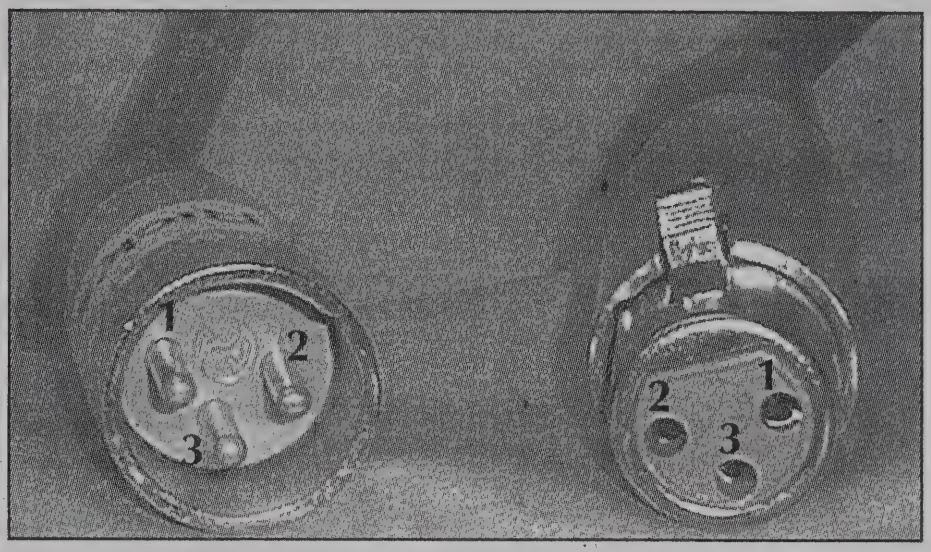
Most all of the professional audio gear on the market uses a balanced audio input. This input is usually terminated in an XLR connector. This is a three pin connector which has become the standard of the broadcast and professional audio equipment. Too bad it has not filtered down into the Amateur Radio equipment but not the case.

The reason for these balanced inputs was to eliminate noise picked up by long microphone cables that are so common in the broadcast and sound reinforcement business. The audio is fed into a balanced transformer which feeds one signal down pin #2 and a second signal to pin #3 that would be OUT of phase — yes OUT of phase from pin #2. Any noise falling upon these two leads would be cancelled, thus leaving only the signal. A very great move! The two signals wires were also inside the pin #1 shield which kept more of the outside noise from reaching the two signal leads, pin #2 and pin #3. This is a wonderful thing to have working FOR you and would certainly solve a lot of problems had the Amateur Radio designers stepped up to the plate — but we have been left with the unbalanced microphone leads and must deal with it. We certainly would have less RFI audio problems!

The big problem for many that don't really understand all of the balanced and unbalanced inputs is trying to connect these two together. Traditionally you have an unbalanced microphone that you would like to connect to a balanced input. So, how do you do that? It's simple!

The balanced XLR connector has three pins plus a chassis ground tab.

1. Ground or shield
2. - audio input
3. + audio input
4. CHASSIS GROUND tab



We have just two leads from the unbalanced microphone. The hot audio lead and the ground shield. The ground shield will be connected to pin #1, across the chassis ground tab at the top of the connector and to pin #2. The hot audio unbalanced lead will connect to pin #3. So, the XLR will be connected with ground shield on pin #1, ground tab and pin #2. Hot on pin #3. It's that easy. You have actually grounded the minus (-) audio input of the balanced input along with the shield and chassis ground while the hot audio lead feeds the + pin #3 input.

This is true for any interface connections — any time you have an unbalanced input that wants to feed a balanced input. Use high quality, heavy shielded, hopefully dual-shielded, microphone audio cable. Try looking for an industrial electronics supplier in your city. If you have a television or commercial radio station, find out where their engineers shop. THAT'S the place you get the high quality cable and many times those professional audio processors and equalizers.

— Have a question about audio? Bob Heil, K9EID, can be reached by mail to: 5800 N. Illinois, Fairview Heights, IL 62208-3505, or by e-mail at: bob@heilsound.com.

Awesome Audio Demonstration!
WWW.W2IHY.COM
Your Transmit Audio Is Outstanding!
The W2IHY 8 Band Audio Equalizer And Noise Gate brings professional
The W2IHY 8 Band Audio Equalizer And Noise Gate provides three powerful audio-management tools for your microphones and radios. Fine-tune your microphone with 8 Bands of Equalization. Customize your audio for that rich, full broadcast sound or penetrating, pileup busting contest and dx audio. Change from one audio "personality" to another instantly with smooth-action slide pots. The highly effective Noise Gate eliminates background noises picked up by your microphone. Increases signal clarity and presence.
Universal Microphone and Radio matching capabilities let you interface practically any microphone with any radio! Comprehensive impedance matching and signal level controls for input and output, 8-pin, XLR and RCA microphone jacks. Headphone monitor. Extensive RFI protection.
W2IHY 8 Band Audio Equalizer And Noise Gate $229.99 (Kit $189.99)
Microphone Cable (specify radio make & model) $15.00
W2IHY Dual Band Audio Equalizer And Noise Gate $129.99 (Kit $99.99)
S&H $8.00 Three year parts & labor warranty.
30-Day money back no questions asked guarantee!
Toll-Free 877-739-2449
845-889-4933
W2IHY Technologies
19 Vanessa Lane • Staatsburg, NY 12580
E-mail: Julius@W2IHY.COM
WWW.W2IHY.COM

Bob Heil, K9EID

Wiring unbalanced microphones to XLR inputs

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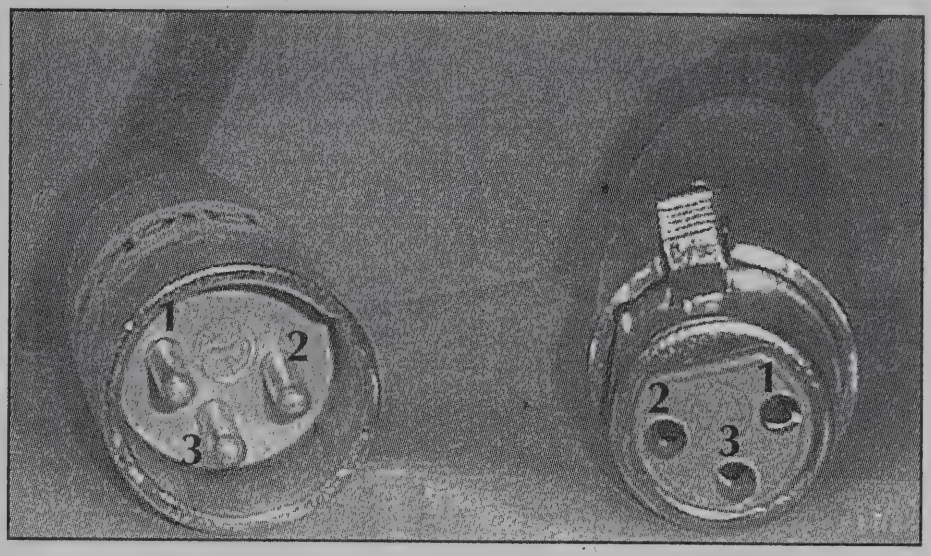

The reason for these balanced inputs was to eliminate noise picked up by long microphone cables that are so common in the broadcast and sound reinforcement business. The audio is fed into a balanced transformer which feeds one signal down pin #2 and a second signal to pin #3 that would be OUT of phase — yes OUT of phase from pin #2. Any noise falling upon these two leads would be cancelled, thus leaving only the signal. A very great move! The two signals wires were also inside the pin #1 shield which kept more of the outside noise from reaching the two signal leads, pin #2 and pin #3. This is a wonderful thing to have working FOR you and would certainly solve a lot of problems had the Amateur Radio designers stepped up to the plate — but we have been left with the unbalanced microphone leads and must deal with it. We certainly would have less RFI audio problems!

The big problem for many that don't really understand all of the balanced and unbalanced inputs is trying to connect these two together. Traditionally you have an unbalanced microphone that you would like to connect to a balanced input. So, how do you do that? It's simple!

The balanced XLR connector has three pins plus a chassis ground tab.

1. Ground or shield
2. - audio input
3. + audio input
4. CHASSIS GROUND tab

We have just two leads from the unbalanced microphone. The hot audio lead and the ground shield. The ground shield will be connected to pin #1, across the chassis ground tab at the top of the connector and to pin #2. The hot audio unbalanced lead will connect to pin #3. So, the XLR will be connected with ground shield on pin #1, ground tab and pin #2. Hot on pin #3. It's that easy. You have actually grounded the minus (-) audio input of the balanced input along with the shield and chassis ground while the hot audio lead feeds the + pin #3 input.

This is true for any interface connections — any time you have an unbalanced input that wants to feed a balanced input. Use high quality, heavy shielded, hopefully dual-shielded, microphone audio cable. Try looking for an industrial electronics supplier in your city. If you have a television or commercial radio station, find out where their engineers shop. THAT'S the place you get the high quality cable and many times those professional audio processors and equalizers.

— *Have a question about audio? Bob Heil, K9EID, can be reached by mail to: 5800 N. Illinois, Fairview Heights, IL 62208-3505, or by e-mail at: bob@heilsound.com.*

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DRAKE 1525 EM MICROPHONE

The R. L. Drake Company 1525 EM Microphone has an 'auto-patch' encoder built-in with a dynamic microphone element. The low impedance dynamic microphone provides excellent audio quality throughout the voice frequency range from 300 to 5,000 Hz. The 500 ohm impedance allows use with units designed for dynamic microphones and also with units with high impedance input.

The encoder provides the required dual-tone frequencies for operation with repeaters equipped for 'auto-patch'. The tone encoder is designed with a complementary MOS enhancement mode device, the Motorola MC14410. It is designed to accept digital inputs in a 4 x 3 matrix format, and to digitally synthesize the high and low band frequencies specified by telephone tone dialing systems. The inputs are originated in the Digitran® high reliability keyboard from a 4 x 3 matrix keypad, which generates 4 row and 3 column input signals in a 2 of 7 format. Master clocking for the MC14410 is achieved from a crystal controlled 1 MHz oscillator.

The encoder output tone levels are factory adjusted for the correct level when compared with average operator voice levels. Tone levels which are too high or too low may result in erratic or unreliable operation when used with a telephone dialing system. Before making any adjustment in the tone level control, determine if the microphone gain control in the transceiver is correctly set for desired voice level. If necessary, the encoder tone levels may be adjusted by removing the four screws located on the rear of the microphone case, and adjusting potentiometer R6 for desired levels.

Single frequency tones may be generated by depressing two (2) keys in the same row or column simultaneously. The encoder supply voltage is obtained from the transceiver through the microphone jack and plug. A voltage in the range of +7.5 to +15 V must be supplied to pin 4 of the microphone jack. The necessary modifications to R. L. Drake Company transceivers are detailed in the attached schematic diagrams.

The 1525 EM microphone may be used with most FM transceivers. Due to the wide variety of connectors used by various manufacturers, only the microphone wiring connections are shown in detail on the attached schematic. In some cases it may be more practical to install the R. L. Drake Company microphone jack in the transceiver. The matching jack may be purchased from the R. L. Drake Company, Part No. 3281735.

SPECIFICATIONS:

Microphone Element:	Low impedance – dynamic
Frequency Response:	300-5000 Hz
Output Impedance:	500 ohms
Microphone Output Levels:	–72 dBm per microbar. Approximately 3 mV (–47 dBm) with average voice level.
Encoder Audio Level:	Adjustable from approximately 1 mV to 5 mV with internal potentiometer.
Frequency Tolerance:	Better than ±1% from –20°C to +50°C.
Supply Voltage:	+7.5 to +15 V obtained through microphone cable from transceiver.
Encoder Keyboard:	High reliability Digitran® keyboard.
Dimensions:	2.6" x 3.5" x 1.7" 6.6 x 8.9 x 4.3 cm. Weight: 8 oz. (.227 kg.)

OUTPUT FREQUENCY TABLE

KEY	LOW FREQUENCY Hz		HIGH FREQUENCY Hz
1	697	plus	1209
2	697	plus	1336
3	697	plus	1477
4	770	plus	1209
5	770	plus	1336
6	770	plus	1477
7	852	plus	1209
8	852	plus	1336
9	852	plus	1477
0	941	plus	1336
*	941	plus	1209
#	941	plus	1477

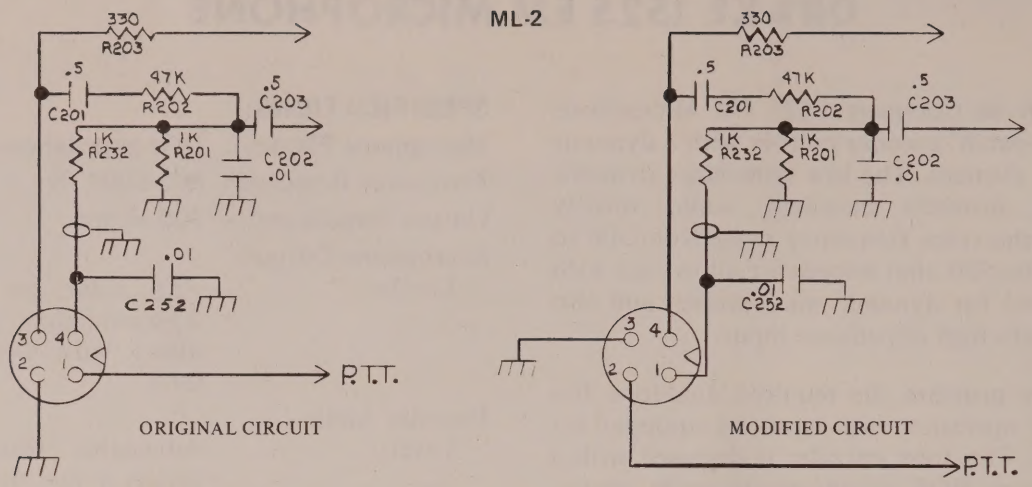
When a single digit key is depressed output frequency is a combination of low frequency and high frequency tones indicated in table.

SINGLE TONE OUTPUT

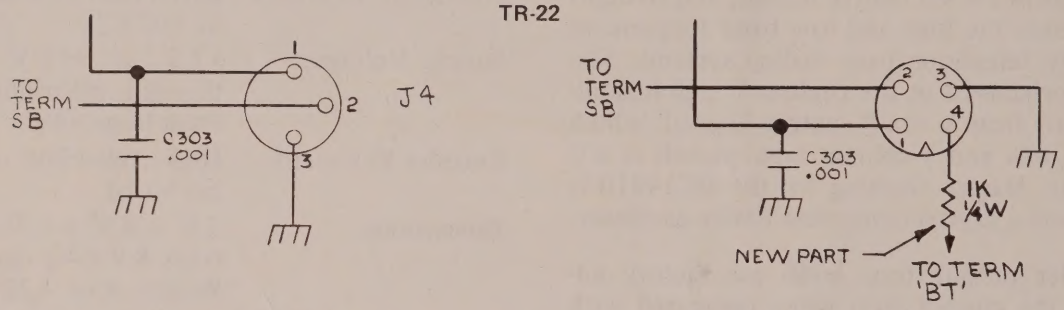
Single tone output is available by depressing two keys simultaneously in any row or column.

KEYBOARD			
1	2	3	697
4	5	6	770
7	8	9	852
*	0	#	941
1209	1336	1477	Frequency Hz

ML-2



TR-22



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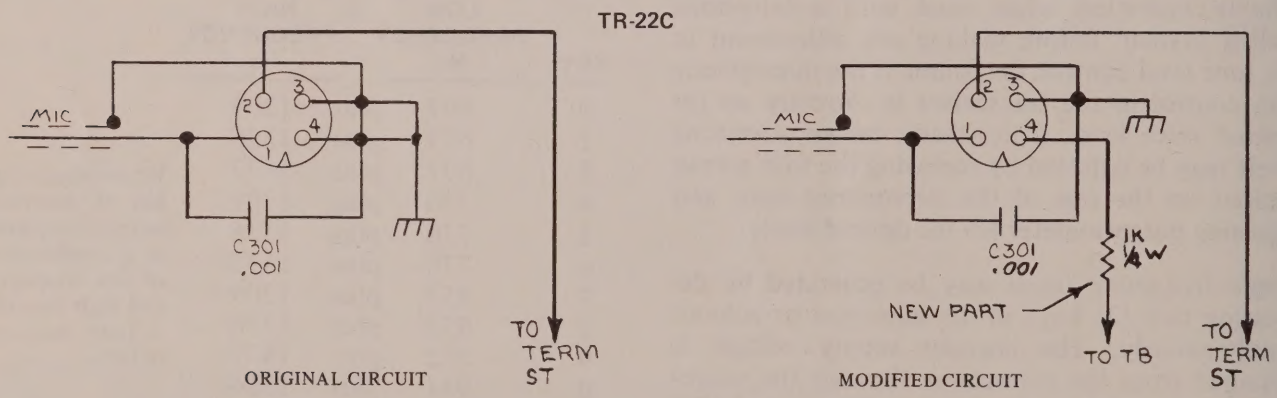

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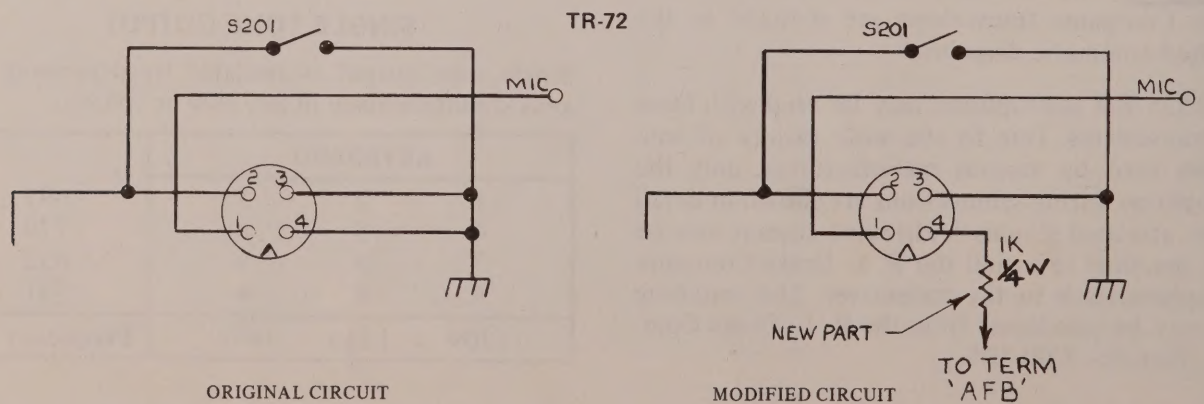

DRAKE

TR-33C
NO MODIFICATION REQUIRED
UNITS ARE FACTORY-WIRED FOR USE
WITH DRAKE 1525 EM MICROPHONES

BK
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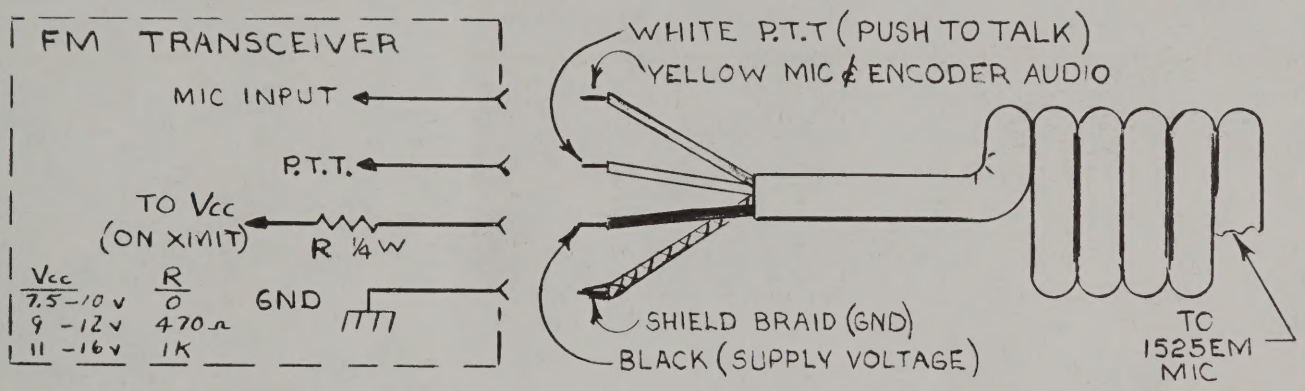
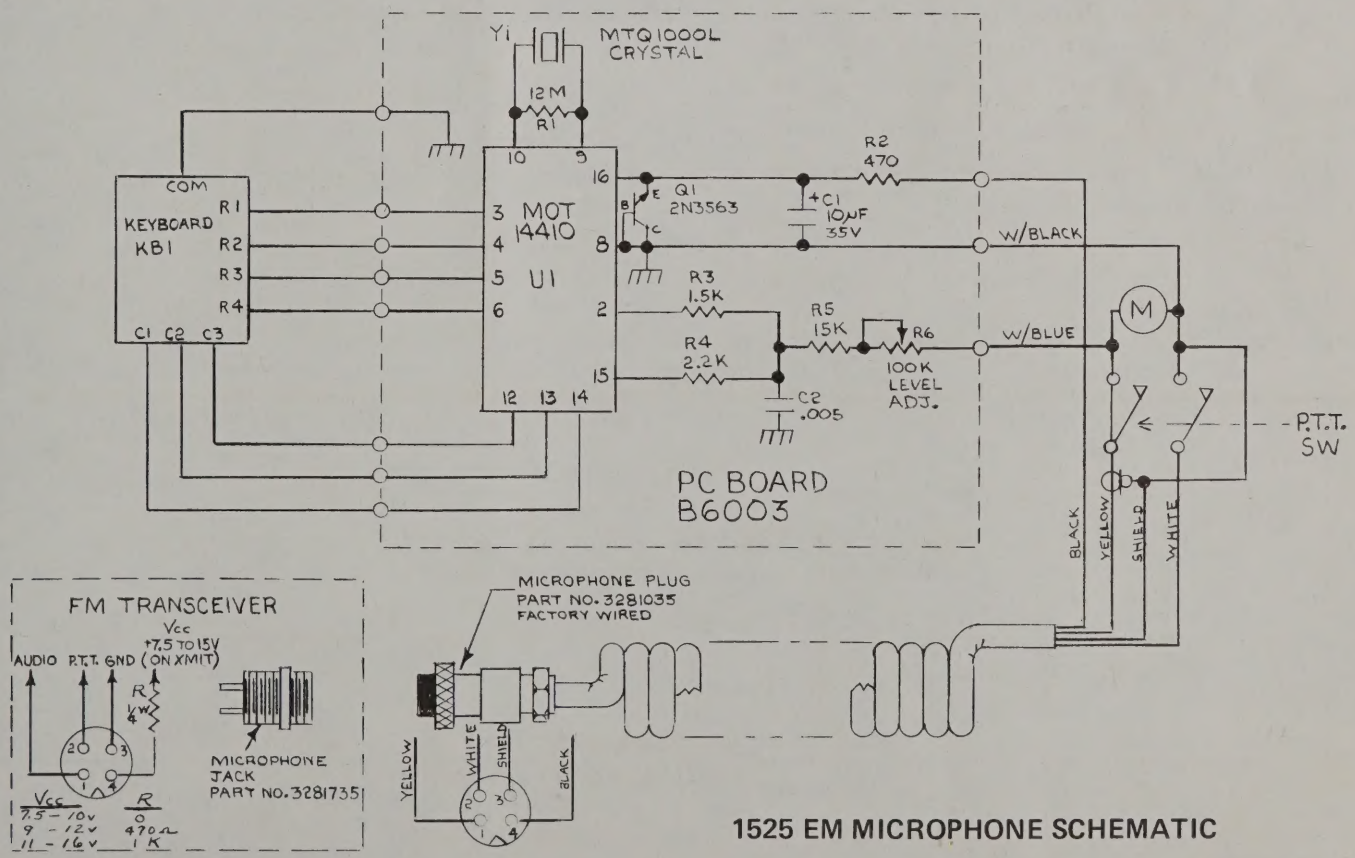
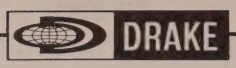
FM TRANSCEIVERS OTHER THAN DRAKE





1525 EM MICROPHONE SCHEMATIC

470Ω = YVBN



LIMITED WARRANTY

R. L. DRAKE COMPANY warrants to the original purchaser that this product shall be free from defects in material (except tubes and RF output transistors) or workmanship for ninety (90) days from the date of original purchase.

During the warranty period the R. L. DRAKE COMPANY or an authorized Drake service facility will provide free of charge both parts (except tubes and RF output transistors) and labor necessary to correct defects in material or workmanship.

To obtain such warranty service, the original purchaser must:

(1) Complete and send in the Warranty Registration Card.

(2) Notify R. L. DRAKE COMPANY or its nearest authorized service facility, as soon as possible after discovery of a possible defect, of:

(a) The model number and serial number, if any;

(b) The identity of the seller and the approximate date of purchase;

(c) A detailed description of the problem, including details on the electrical connection to associated equipment and the list of such equipment.

(3) Deliver the product to the R. L. DRAKE COMPANY or the nearest authorized service facility, or ship the same in its original container or equivalent, fully insured and shipping charges prepaid.

Correct maintenance, repair and use are important to obtain proper performance fr. m this product. Therefore, carefully read the Instruction Manual. This warranty does not apply to any defect that R. L. DRAKE COMPANY determines is due to:

(1) Improper maintenance or repair, including the installation of parts or accessories that do not conform to the quality and specifications of the original parts.

(2) Misuse, abuse, neglect or improper installation.

(3) Accidental or intentional damage.

All implied warranties, if any, terminate ninety (90) days from the date of the original purchase.

The foregoing constitutes R. L. DRAKE COMPANY'S entire obligation with respect to this product, and the original purchaser and any user or owner shall have no other remedy and no claim for incidental or consequential damages. Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you.

This warranty gives specific legal rights and you may also have other rights which vary from state to state.

R. L. DRAKE COMPANY
540 Richard Street • Miamisburg, Ohio 45342

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